

digit **FastTrack**

YOUR HANDY GUIDE TO EVERYDAY TECHNOLOGY

to

Windows Phone

FAST TRACK TO WINDOWS PHONE

- How it all began
- The hardware
- Phone 7 basics
- Media apps
- Email
- Office apps
- The Games Hub
- Tips & tricks
- The future and Mango update



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CREDITS

The people behind this book

EDITORIAL

Executive Editor

Robert Sovereign-Smith

Writer

Hanu Prateek K

Copy Editor

Infancia Cardozo

DESIGN

Sr. Creative Director

Jayan K Narayanan

Art Director

Anil VK

Associate Art Director

Atul Deshmukh

Sr. Visualiser

Manav Sachdev

Visualisers

Prasanth TR & Anil T

Chief Designer

Baiju N.V

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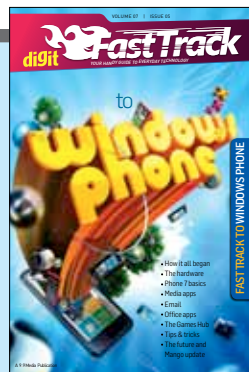
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COVER DESIGN: PRINCE ANTONY

Introduction


Windows Phone 7 is the latest OS from Microsoft, popular for its PC operating system Windows. Phone 7 promises to be a revolutionary and effective mobile operating system. Today, the OS is being heralded as the mobile industry's iPhone from years ago. Simply put, it's a new way of doing things and quite possibly a better way. Windows Phone is similar to other smartphone platforms in many ways – by supporting apps, for instance – yet different in many other. It provides its users with a simpler interface, a visually better presentation, and a more personalised and customisable experience. While Apple is busy fighting it out with Google “me-too” Android, Microsoft has been forced to rethink its mobile offerings and retrench. This necessity has resulted in a far more thoughtful platform – one that doesn't copy what the others are doing.

Windows Phone 7, thus far, has clearly set a new standard in terms of mobile technology with its leaning towards convenience and productivity. Compared to other OSes in the market, it can seamlessly integrate with both, your personal and work computers merely because of its ties to Windows – still the most widely used OS on personal computers. Though relatively recent, it still runs a great variety of mobile applications and is great with games, music and videos. Smartphones keep getting smarter and more functional every day, and having the Windows Phone onboard definitely gives them an edge. Merely because one has used a smartphone previously, one shouldn't expect to be able to use a new Windows Phone without any form of guidance. That's where this Fast Track comes into the picture. We hope to provide a hands-on guide to getting the most from your Windows Phone without all the jargon of a user manual. In addition, the tips and tricks will help you get the most juice out of your phone.

Your Windows Phone can be loads of fun while pushing you to be extremely productive, but only if you know how to use it. Whether this is

your first time using a smartphone or your first time using a touch screen, this Fast Track will attempt to give you all the information you need to get started. This Fast Track is more of a reference and you might not have to read right from the start to the end to get everything you need. The information is clearly organised and easy to get to as per your requirement.

Unlike Apple's iPhone operating system, which is available only on the iPhone itself, several manufacturers will offer phones based on the Windows Phone 7 operating system, each with its own subtle variation. Microsoft has closely defined many of the key features that need to be there regardless of the manufacturer, which means that almost all the information in this book will apply to your phone, regardless of your phone manufacturer or cellular carrier. You have to keep in mind that, some screen layouts on your PC and Windows Phone will look subtly different from what you see in this book. Sometimes this is because of differences in resolution among PCs. In the case of Windows Phone 7, Microsoft often makes creative enhancements, like changing icons. These differences should be slight and shouldn't affect your ability to understand the text.

No technology is perfect and Windows Phone is no exception but Microsoft's new mobile platform has the right feature set and underlying capabilities to redefine the way we consume computing and online services on the go. Hope you're as excited as we are about this OS. 



HOW IT ALL BEGAN

Microsoft began its long journey to developing what we today know as Windows Phone with Windows CE

Way back in 1995, Microsoft began testing a new type of Windows that would run on consumer electronics (CE) devices instead of PCs. Called Windows CE, this system looked a lot like the Windows 95 OS that was popular on the PCs of the day, and it offered programmers a similar experience for developing applications. But underneath the hood, Windows CE was different: It was aimed at a non-PC hardware platform that was appropriate for the mobile devices entering the market at the time, could run with minimal

RAM and storage, and utilised a stylus as a pointing device instead of a mouse. The original version of Windows CE was designed for a short-lived range of miniature PC-like devices called Handheld PCs. These devices looked like mini-laptop computers, but were awkwardly sized – too big to fit in a pocket and too small to use comfortably.

Windows CE and the first awkward handheld PCs also had the misfortune of shipping in the same year as Palm's innovative Pilot. This tiny, palm-sized PDA (personal digital assistant) was an instant smash hit, offering users a device that was pocket sized, useful and fun. Struggling to keep up with Palm in the suddenly-hot PDA market, Microsoft melded its Windows CE system to work on a palm-sized device and with the resulting loss of onscreen real estate. Unfortunately, it decided to brand this new product as the Palm PC, prompting Palm to sue for trademark infringement. After some grandstanding, Microsoft backed down, renamed the product to Palm-Sized PC, and held its collective breath. Palm didn't sue again, but then it didn't need to. The Palm-Sized PC was a dud, and consumers didn't respond to the devices that used a desktop Windows interface (this time with the Start button moved to the top of the screen) on a device that could actually fit in your hand.

Microsoft kept trying. It renamed the system, yet again, to Pocket PC and over the course of a few years, the software giant actually did pretty well given the relatively small size of the PDA market. But the most important change to come during the Pocket PC era was the development of a version of this OS that would work on a new generation of PDAs with phone functionality. Over time, these devices became known as smartphones for what we assume are obvious reasons. And Microsoft was uniquely positioned to enter and perhaps even dominate this then-nascent market. Microsoft's first smartphones were developed as an adjunct to the Pocket PC line, where one version of the OS would serve the PDA platform and the other would serve CE devices.

Windows Mobile

PDA phones began adding phone-specific features such as a numeric keyboard, dialer and contacts integration. In 2003, the software giant renamed this product line, again, this time to Windows Mobile, and it released a



Windows Mobile OS

confusing number of product editions, including two aimed at phones – a Windows Mobile 2003 Smartphone Edition and a Windows Mobile 2003 Pocket PC Phone Edition. Why this differentiation? Smartphones, at the time, were seen as very small devices with tiny screens, whereas Pocket PC Phones would have larger touch-based screens that more closely resembled the previous generation PDA devices. This distinction eventually disappeared.

Over time, Windows Mobile grew more powerful and functional, but it also suffered at the hands of its more aggressive competitors. The first was Research in Motion, or RIM, a Canadian company that grew to great success on the back of its “push” e-mail functionality. Push allows users of



The rise of the smartphones

RIM’s BlackBerry smartphones to access their email (as well as contacts, calendar and tasks) over the air, directly and not via synchronisation, which is slower and requires a wired connection between the device and the user’s PC. Microsoft responded to RIM by adding push functionality to Windows Mobile, but by then it was too late: RIM began dominating the corporate market for smartphones, especially in the United States, a position it has yet to relinquish.

And then, in 2007, the world changed dramatically. Apple announced and then released its iPhone smartphone. By targeting consumers rather than business users, and focusing on functionality such as media playback and internet browsing, Apple opened up smartphones to a whole new market. It didn’t hurt that the iPhone, along with its software, was beautiful to look at, fun to use and featured advanced multi-touch technology that the competition struggled to duplicate for years. The iPhone took off for good once Apple opened up the device to third-party development and established a thriving Apps Store from which users could download and, for paid apps, purchase selections from an ever-growing collection of apps. Today, no modern smartphone platform – including Windows Phone – is considered complete without such a store

Microsoft, like the competition, has spent years trying to match Apple in the smartphone market. It developed new versions of Windows Mobile to no avail, and lost market share over the next three years. It developed, but never released, a Windows Mobile 7 product that would have basically copied the iPhone design, morphing it on top of the old Windows Mobile foundation that, quite frankly, hadn't changed appreciably since that very first version of Windows CE. One thing was clear: If Microsoft continued down this path, Windows Mobile would have been driven into the ground by RIM in the business market and by Apple in the consumer market. It's at moments like this that companies typically do one of two things. They can fail to see what's happening and become slowly more irrelevant over time. Or they can simply start over.

A new beginning: Windows Phone 7

In 2009, examining both the marketplace and the work it had done toward a new version of Windows Mobile, Microsoft hit the reset button. It jettisoned years of work, over a decade of technological history, and simply decided to start over from scratch. Well, not entirely from scratch. As it turns out, other groups within Microsoft had been laying the groundwork for what would become the company's next generation phone platform. This work started with a project called "Freestyle", which became Windows Media Center, a TV-friendly interface for digital media. Aside from some obvious graphical niceties and functional excellence, the big deal with Media Center, in retrospect, was that it pushed Microsoft to start thinking about non-traditional PC interaction, in this case a TV-based remote control.

As Media Center evolved over the lifetimes of Windows XP, Vista and then 7, it was adapted to work with other non-traditional interfaces, including the pen/stylus interface from Tablet PCs, and, later, touch and multi-touch. By the time Windows 7 appeared, Media Center had evolved to



The all new Windows Phones




Soon the Media Center made its way from PCs to tablets

work with HDTV displays and multi-touch. Media Center didn't stand alone, of course. Microsoft pushed this interface to mobile devices as well, first via its short-lived Portable Media Center platform and then with the "Origami" interfaces it created for the Ultra-Mobile PC. Both of these products were failures from a sales perspective, but they provided Microsoft with valuable experience in melding very visual user interfaces and touch capabilities into highly portable form factors.

And then came Zune. Microsoft's answer to the iPod hasn't exactly set the world on fire, but again, by iterating this portable media platform over four generations of devices, culminating with the Zune HD in late 2009, Microsoft gained still more experience. And its work on the Zune HD and the PC



Microsoft's answer to iPod

software employed by Zune users to synchronise with PC-based digital media content, would lead directly to the Windows Phone platform. This platform has many components, and as you'll discover, Windows Phone users, like Zune HD users, also use the Zune PC software to synchronise PC-based music, video and photos to their devices. But the single biggest influence that the Zune platform has on Windows Phone, of course, is the user interface (or "user experience"). And on Windows Phone, this highly evolved UI is now called "Metro". 

CHAPTER #2



THE HARDWARE

Microsoft has engineered this new platform to work the way you do, with a set of integrated experiences that blend content from a variety of locations

While Microsoft's previous smartphone platform Windows Mobile had a few recommendable features, one of the problems with that platform was the almost limitless number of hardware types and form factors that shipped from a variety of device makers and wireless carriers. This diversification made the platform attractive to these companies for a while. But it also made it almost impossible for Microsoft to deliver software updates to customers, something it has been able to do more easily on Windows PCs via the Windows Update and Microsoft Update services.

Apple's wildly popular iPhone changed the smartphone market in many ways when it arrived in 2007. One of the most important iPhone innovations was placing the reins in Apple's hands when it came to controlling software updating, and not the wireless carriers. And the result has been years of steady improvements, all of them absolutely free, giving customers new and exciting capabilities over time. As a result, the iPhone has evolved into a truly compelling smartphone, one so influential that it has transformed the way other companies approach this market as well. Witness the rise of Google Android, a more open iPhone copy of sorts.

As for Microsoft, the software giant wanted to retain the good bits from Windows Mobile and throw out the bad. So while it still allows multiple device makers and wireless carriers to sell Windows Phones – diversity is good in some cases – it has also fleshed out a rigid set of hardware specifications for this platform. So if a device maker or wireless carrier wishes to sell Windows Phone devices, they must conform to the specs.

There were also a few other reasons Microsoft couldn't deliver software updates to Windows Mobile customers. Primarily, wireless carriers didn't want users to get free software updates and preferred customers purchase new phones for fairly obvious reasons.

What's on every Windows Phone

For now at least, these specs are liberating rather than confining, and at the time of Windows Phone's initial launch in late 2010, together they represent the makings of a very high-end smartphone indeed. According to Microsoft, every hardware producer using Windows Phone 7 must surely have the following specifications built into their device:

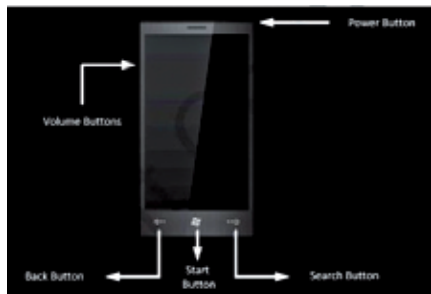
- ▶ **Processor (CPU):** All smartphones running on Windows Phones must have a minimum of 1 GHz ARMv7 Cortex or Scorpion processor. What this means to you is that all Windows Phone



Every Windows Phone mobile has to have certain hardware

devices will be able performers. In the world of mobile devices, a 1 GHz processor is still fairly uncommon beyond most high-end devices. And this positioning is important for Windows Phone as it's a premium smartphone platform.

- ▶ **Graphics:** Windows Phones 7 will be shipping with an installation of DirectX 9 capable graphics processing unit, or a GPU. This is to make sure that your phone has exactly similar graphical capabilities from a user interface point of view as seen in Microsoft's Xbox 360 videogame console. In effect we have a spectacular graphic and UI design, which has the potential of full-fledged games being ported from the 360 directly to the phone in full fidelity. Note that all Windows Phones use "ClearType sub-pixel rendering" technologies for super-clear text displays. But Microsoft is only specifying a 16-bit colour screen as the minimum, so some higher colour (24-bit) images might have visual banding. If it's advertised this way, consider a Windows Phone with a 24-bit color screen for superior visuals.
- ▶ **RAM and storage:** Each Windows Phone as per Microsoft's specification must have at least 256 MB of RAM (OS and apps memory) with 8 GB or more in Flash memory for storing your data and content which can range from applications to media and documents.
- ▶ **Hardware buttons:** Every Windows Phone comes with a dedicated set of hardware buttons positioned in a consistent way around the device. You have the Back, Home and Search buttons on the front of the phone for going "back" like in a web browser, directly going to the Home screen and opening the Bing search experience directly. The Back button is particularly interesting and useful because it works in different ways throughout the phone. You can use it to go back within an application (to a previous screen or experience), go



The prescribed phone buttons

back between applications (return to the Home screen and then “go back” to the previously-used application), close an open virtual keyboard, menu, dialog or search experience, navigate to a previous page and more. This button, completely absent on the iPhone, is probably one of Windows Phone’s best features. There’s also a standalone hardware-based camera button with additional capabilities like full press and half press for launching, auto-focusing and clicking photos. There are the volume buttons and a power button which also can, with a half press and full press, dim the screen, wake the device etc.



HTC Phone 7 Mozart has an 8MP camera

- ▶ **Camera:** While smartphone cameras haven’t quite caught up to dedicated digital cameras from a quality perspective, your Windows Phone should come pretty close. Microsoft mandates that the phone manufacturers include a minimum 5 MP camera accompanied with flash. You can already find devices that exceed these requirements. The Windows Phone camera must take pictures with an aspect ratio of 4:3, which is non-widescreen. Some phone makers offer enhanced cameras with 16:9 or 16:10 widescreen photo (and video) capabilities. Some even ship devices with a second, front-mounted camera for video conferencing. Note, however, that this second camera is not natively supported by the Windows Phone OS, so the phone maker will need to ship special software for that purpose.

- ▶ **Capacitive multi-touch display:** Similar to most other smartphones these days, Windows Phones are primarily multi-touch based devices which come with software-based keyboards, or Soft Input Panels (SIPs), that work in portrait and landscape modes. The different screens on the phone have features using both, touch and multi-touch, with as many as four contact points. That means you could theoretically place four fingers on the screen. Hardware makers are free to optionally

provide a hardware keyboard as well, and since some users still prefer these physical keyboards to onscreen virtual keyboards, that may be an interesting option.

- ▶ **On-screen resolution:** Windows Phone supports two screen resolutions, 800x480 (WVGA) and 480x320 (HWVGA). The former is more common and more appropriate for what will likely prove to be the most popular Windows Phone configuration. But hardware makers are free to use the lower-resolution screen type, and will likely do so in smaller devices, including those with slide-out hardware keyboards.
- ▶ **Accelerometer:** First brought to smartphones by the iPhone, an accelerometer is a hardware component that lets the phone detect the amount of acceleration along all the six different axes. What this results in is the ability of the Windows Phone to be able to detect and act upon the device being tilted in any particular direction. The accelerometer most primarily can be seen being used when you rotate the device horizontally and the display rotates to accommodate the new orientation. Similarly for a racing game, moving the screen left to right as you play can help you steer the car.
- ▶ **Assisted GPS (A-GPS):** All the Windows Phones come with this latest GPS (global positioning system) hardware, providing quicker startup and better accuracy, the latter of which is key to a US-based requirement that will allow 911 dispatchers to find smartphone users in an emergency.
- ▶ **Compass:** Windows Phones ship with an internal compass, which works in concert with the GPS and other location sensors (including Wi-Fi and cellular connection) to accurately find your location and supply information about the direction you're facing. As originally delivered in late 2010, the compass hardware in Windows Phone works only with the built-in Bing Maps functionality. Microsoft will provide programming libraries to developers to access the compass later, however.
- ▶ **Light sensor:** Thanks to the built-in light sensor, the Windows Phone camera can accurately gauge illumination requirements for the flash and produce accurate and clear low-light photos.

- ▶ **Proximity sensor:** This sensor can detect how close other objects – such as your face or a table – are to the phone. This is so the phone can know when you're making a phone call or when you've placed the device on a table. It can also know when it's in a pocket and thus not respond to button taps.
- ▶ **FM radio tuner:** All Windows Phones ship with an FM radio tuner, providing free access to FM radio and, via bundled software, the ability to mark particular stations as favourites. These specs are what Microsoft calls its "Chassis-1" specs. Presumably, over time, there'll be further updates to the requirements.

What's not on every Windows Phone

If you're an eagle-eyed technology follower, or are simply performing due diligence for your next two-year commitment, you may have noticed that the Windows Phone hardware requirement list doesn't include some hardware features that you believe are important or even necessary in a modern smartphone. In some cases, these omissions are nothing to worry about. Hardware makers are free to exceed Microsoft's requirements and bundle additional features with their phones. In other cases, however, the lack of certain features is a bit more troubling, because the underlying platform simply doesn't support this hardware. Here are some features that Microsoft – good, bad or indifferently – doesn't explicitly require its phone makers to include with a Windows Phone. When picking a Windows Phone, it's a good idea to understand which of these features are valuable to you and choose a device according to its included features.

- ▶ **Wi-Fi:** Despite its absence from the hardware requirement list, you can expect virtually every Windows Phone to include 802.11g (Wi-Fi G) or 802.11n (Wi-Fi N) wireless networking capabilities.
- ▶ **Bluetooth:** There's a similar issue with Bluetooth, a separate wireless networking standard that is most often used to connect portable devices with in-ear headsets, keyboards, in-car navigation systems and other hardware.
- ▶ **Removable storage:** Most non-iPhone smartphones (and virtually all popular Android-based phones) ship with some kind of memory card slot

so that you can inexpensively expand the device's internal storage (but not RAM). Today, these mini memory cards typically range in size from 2 GB to 32 GB of storage. But of course! Technology improves with time.

- ▶ **Ultra-high resolution screens:** At the time of this writing, the iPhone 4 supports a resolution of 960x640, which exceeds the highest resolution supported by Windows Phone? While there's little doubt that the Windows Phone OS could handle higher resolutions, device makers are prohibited from selling such a device at this time. As Microsoft evolves the Windows Phone hardware requirements over time, this limitation will change.
- ▶ **Gyroscope:** While Windows Phone supports an accelerometer, it lacks a gyroscope – a hardware component found in the iPhone 4. In simple words – because this is complicated stuff – a gyroscope simply provides a more accurate, or more sensitive, measurement of how the device is being rotated in X, Y or Z axis (or “directions”). Given the relatively non-subtle hand movements that will be typical in human/phone interaction, we don't consider a gyroscope to be a particularly important improvement over an accelerometer and its loss won't impact the Windows Phone experience – gaming or otherwise.
- ▶ **Video recording:** While Microsoft doesn't specify that the Windows Phone camera be able to record video, virtually all Windows Phones do, in fact, ship with this capability. Expect VGA (640p) or HD (720p) or better video recording capabilities.
- ▶ **Geo-tagging:** Another neat camera feature, geo-tagging allows your camera to optionally “tag” each photo with location data so that you can later discover on a map, where exactly the photo was taken. This capability is absolutely possible with Windows Phone, thanks to its built-in GPS and other location sensors, and is in fact a feature of the built-in camera software.
- ▶ **Headphone jack, microphone and external speaker:** While Microsoft doesn't require Windows Phone hardware makers to include a standard headphone jack, microphone or external speaker(s) on its devices, most of course will do so. Be sure to look for these features, however.

► **USB connection:** While all Windows Phones will need to provide some way to charge the device, Microsoft doesn't specify the type of connection that will be used. The result is that different Windows Phones unfortunately will use different power/charge connections, most of which are some variation of USB outlets. In conjunction with a compatible cable, you can charge your phone via a PC, or with a USB power adapter, via a standard wall receptacle. One useful feature that Microsoft doesn't support, let alone require, is the Zune dock connector that the company previously used on its line of Zune portable media players. This connector worked exactly like Apple's popular dock connector, which provides iPod, iPad and iPhone users with a standard connector type. You won't find a Windows Phone with a Zune dock connector.

You get the idea: Microsoft specifies some of the more important Windows Phone hardware features in order to provide a consistent experience for users. But Windows Phone also leaves a lot up to the device makers, so there will still be some variation between Windows Phones and, unfortunately, even some areas where Windows Phones simply fall short, at least until Microsoft adds support for certain missing functionality.

With Microsoft's previous mobile platform, Windows Mobile, device makers and wireless carriers were able to further differentiate their wares by adding custom software solutions or by actually



A slide keyboard on LG Quantum

replacing the tired Windows Mobile user interface with a UI “shell” the way HTC Sense does. Microsoft doesn't allow this level of customisation in Windows Phone – part of its effort to exert more control over the platform and ensure that customers have a consistent experience, regardless of which device they use. However, device makers and wireless carriers are allowed to offer far more subtle customisations via software applications, which run under Windows Phone. Except in rare instances, these apps shouldn't be considered true differentiators, and can instead be ignored.



Nokia's latest offerings with Windows Phone 7

After all this info, if you aren't excited by Windows Phone then we don't know what it will take. You're going to want to spend some time preparing for your new phone and understanding it before rushing out to the store and spending your money. There are two key things to do before buying a phone. First, establish a Windows Live ID and connect it with all of the online services to which you belong, providing a central hub for your connections and relationships. Then, understand which Windows Phone hardware features are required and optional, allowing you to make a more educated buying decision. With these tasks out of the way, you're ready to head out to your local electronics retailer and purchase your new Windows Phone. **d**



PHONE 7 BASICS

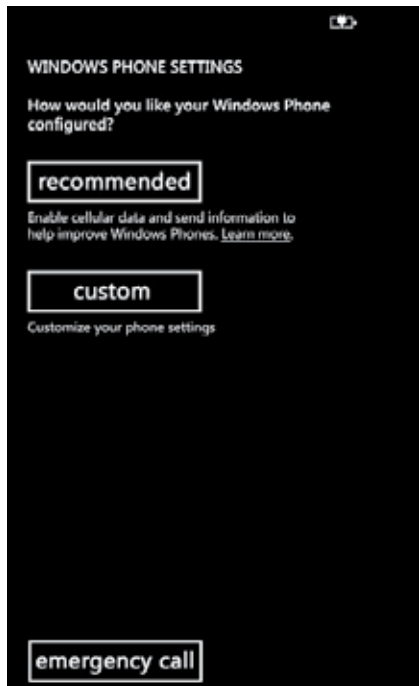
If you own a Windows Phone 7 device, you're probably already aware of its basic functions but just to get you up to speed, let's dive right into the most basic features

Your Windows Phone can be lots of fun and can make you very productive but only if you know how to use it. Whether this is your first time using a smartphone or your first time using a touch screen, this chapter will give you the information you need to get started. Even veteran users of cell phones will benefit from a quick glance into the basics.

Unlike Apple's iPhone operating system, which is available only on the iPhone itself, several manufacturers will offer phones based on the Windows Phone 7 operating system, each with its own subtle variation. Microsoft has closely defined many of the key features that need to be there regardless of the manufacturer, which means that almost all the information in this book will apply to your phone, regardless of the phone manufacturer or your cellular carrier. In this chapter, we fill you in on the basics of using your new device.

Turn on your phone

The On button is on the top of the phone. On the button is a symbol. Press the On button for a second, and you should see the screen light up. Don't press the on button too long after the screen lights up, if you do, the phone may turn off again. Your phone should arrive with enough of an electrical charge that you won't have to plug it in to an outlet right away. You can enjoy your new phone for the first day without having to charge it. If you're used to talking on a cell phone, you may be looking for the usual wireless status bar. Windows Phone 7 doesn't automatically show you the status bar. The Windows Phone 7 designers went with the philosophy that giving you visual representation only confirms what you already know by listening. Coverage for cellular networks is pretty good these days, so they made the decision to unclutter the screen and have the status bar displayed only if you want it to be. To display the status bar, tap the top of the screen with your finger. Voila! The status bar appears.



Windows Phone 7 welcome screen

Charge your phone and manage battery life

Windows Phones use lithium-ion batteries. Although you probably don't have to plug it in to an outlet right away, the first time you do plug it in, you should allow it to charge overnight. You'll hear all kinds of battery lore out there that's left over from earlier battery technologies. For example, lithium-ion batteries don't have a memory like NiCad batteries did. So, you don't have to be careful to allow the battery to fully discharge before recharging it. Your phone comes with at least one battery charger. When it comes to charging, Windows Phone 7 devices can be very different from one manufacturer to the next. In addition to the battery charger that comes in the box with the phone, you may have several other charging options:

- Wall charger
- Travel charger
- Car charger
- Fuel cell or photocell charger

If you take good care of it, your battery should last about two years with a drop in performance of about 25 percent from the condition it was in when you took it out of the box. At that point, you can replace the battery or upgrade to the newest Windows Phone.

Navigate around the phone

Windows Phone 7 devices differ from other smartphones in that Windows Phones have significantly fewer hardware buttons. In their place is a much heavier reliance on buttons on the screen. In this section, we guide you through your phone's buttons, touch screen, and keyboard.

The phone's buttons

Microsoft has reduced the number of hardware buttons on the Windows Phone 7 device to six, unless the phone has a keyboard. We will cover them all in the following sections.

- ▶ **Buttons on the front:** Beneath the Start screen are three buttons that you use to control what appears on the screen. From left to right, they are the Back button, the Start button, and the Search button
- ▶ **Back:** The Back button on your phone is similar to the Back button in your Web browser on your computer. As you start navigating through the screens on your phone, pressing the Back button takes you back

to the previous screen. If you keep pressing the Back button, eventually you'll get to the Start screen.

- ▶ **Start:** Pressing the Start button takes you directly to the Start screen. The icon, is a silhouette of the familiar Windows icon. The Start button comes in handy when you want to change what you're doing with the phone, such as going from browsing the Web to making a phone call.



The Windows Phone 7 start screen

- ▶ **Search:** Use the Search button to find information on your device. When you press the Search button, a Search screen pops up along with a small software keyboard so that you can enter the text to describe what you want to search for. The search is based on the application you're using at the moment. If you're in the phone application, the Search button searches your telephone book for a contact based on the text you enter. If you're on the Internet, it searches the Web. If you're on the Start screen, it searches the whole phone.
- ▶ **Side buttons:** In addition to the three buttons on the front, there are three buttons on the side of the phone: the Power button, the Camera button, and the Volume button.
- ▶ **Power:** The Power button is on top of the phone. In addition to powering up the phone, it puts the device into sleep mode if you press it for a moment while the phone is on. Sleep mode shuts off the screen, suspends any running applications, and turns off the radios in the phone. The advantage of Sleep mode (over completely turning off the phone) is that hitting any of the hardware buttons wakes up the phone, it's ready to operate in just a few seconds. If you turn off the phone, it takes longer to start back up. You can't receive any calls while your phone is in sleep

mode. Sleep mode is different from what happens when you haven't used the phone in a little while. After 15 or 20 seconds, the screen turns off. The screen is the biggest user of power on the device. Having it go dark saves a large amount of battery life. However, the phone is still alert to any incoming calls, if someone calls you, the screen automatically lights up. Sleep mode barely uses any power, so it will not affect your battery life. Only use sleep mode if you don't want to be disturbed by calls. Otherwise, just leave your phone alone and it will simply shut off the screen to preserve battery life.

► **Camera:** The digital camera is among the most popular features on cellular phones. The camera may vary from one manufacturer and cellular carrier to the next, but Microsoft has set a minimum standard of 5 megapixels and a flash; your phone may have higher resolution. What does not vary is that pressing the Camera button launches the Camera application. Also, after the Camera application is up, you press the Camera button to take a picture.

► **Volume:** Technically, there are two Volume buttons, one to increase the volume and the other to lower it. The Volume buttons control the volume of all the audio sources on the phone, including the following:

- The phone ringer for when a call comes in
- The phone headset when you're talking on the phone
- The volume from the digital music and video player

The Volume buttons are aware of the context of what volume you're changing. If you're listening to music, they raise or lower the music volume but leave the ringer and phone earpiece volumes unchanged. The Volume buttons complement software settings you can make within the applications. For example, you can open the music player software and increase the volume on the appropriate screen. Then you can use the hardware buttons to decrease the volume and you'll see the volume setting on the screen go down.

The touch screen

To cram the information that you need onto one screen, Microsoft takes a radical approach to screen layout. To make this new approach work, there are several finger motions that you'll want to become familiar with to work with your screen. We cover these motions in this section. Tap to select or launch from

the screen. A tap is a simple touch of the screen. Finger down on a single point within a bounded area and back up within a short period of time.

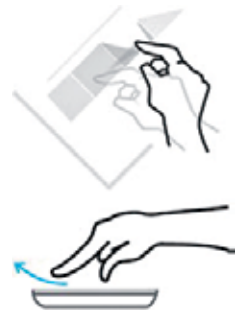
In some ways, the tap is like a single click of a mouse on a computer screen. It allows you to select options on a screen. Don't press and hold. If you leave your finger on the screen for more than an instant, the phone gets confused and thinks that you want to do something more. The other finger actions help you move around the screen to get to the information you need at the screen resolution that you want. To overcome the practical realities of screen size on a phone that will fit into your pocket, the Windows Phone embraces a panorama screen layout. The full width of the screen is accessible, but only the part bounded by the screen of the Windows Phone is visible on the display. To see more of the screen, you have several choices: pan, flicks, pinch and stretch, and double taps.

- ▶ **Pan:** The simplest finger motion on the phone is the pan. You place your finger on a point on the screen and your finger drags the image on the screen until you lift your finger. The pan motion allows you to move slowly around the panorama. This motion is like clicking on the scroll bar and moving it slowly. Finger down followed by finger move in a single or multiple directions. Pan ends on finger up (or when another gesture starts).



The pan motion using touch

- ▶ **Flicks:** To move quickly around the panorama, you can flick. Finger down followed by a quick finger move in a single direction and finger up. Flick can also follow a pan gesture. Better control of this motion will come with practice. The stronger the flick, the more the panorama will move.



The flick motion using touch

- ▶ **Pinch and stretch:** Zoom options change the magnification of the area on the screen. You can zoom out to see more features at a smaller size, or zoom in to see more detail at a larger size. To zoom out, you put two fingers on the screen and pinch the image. The opposite motion is

to zoom in. This involves the stretch motion. Although pinch and stretch work with panoramas, these motions are most useful when you're in applications that aren't sized for your screen, such as Web pages. However, you can use them wherever you like.

- ▶ **Double tap:** The double tap is where you touch the same button on the screen twice in rapid succession. You use the double tap to jump between a zoomed-in and a zoomed-out image to get you back to the previous resolution. This option saves you from any frustration in getting back to a familiar perspective. It's important to time the taps so that the phone doesn't interpret them as two separate taps.

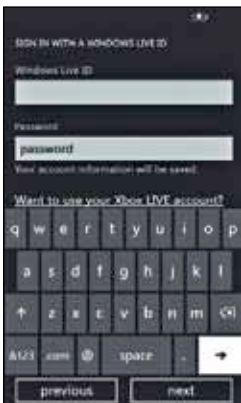


Pinch and stretch

The keyboard

The screen of the Windows Phone is important, but you'll still probably spend more time on the keyboard entering data on a small QWERTY keyboard. All Windows Phones come with a software keyboard; some come with a software keyboard and a hardware keyboard. The software keyboard automatically pops up when the application detects that there is a need for user text input. The keyboard appears at the bottom of the screen. For example, if you're searching for the Bangalore Art Museum

within Bangalore on Bing Maps, you tap the Search button, and the keyboard will pop up on the screen. In this case, a text box pops up in addition to the keyboard. As you tap out Bangalore Art Museum, the text appears in the box on the screen as if you had typed it on a hardware keyboard. When you tap the Search button, the keyboard disappears and the location of the Seattle Art Museum is highlighted on your phone. The phone is smart enough to know when the keyboard should appear and disappear. If your phone has a hardware keyboard, the software keyboard doesn't pop up automatically.



The onscreen keyboard



The Zune UI – a predecessor to the Metro UI

The user interface

Microsoft designed the Windows Phone user experience code named “Metro” as the key differentiator between this new generation of devices and the competition. To date, all smart phones, including Apple’s stunning and innovative iPhone, Google’s me-too Android, RIM’s business-oriented Blackberry, and others, have been designed to work like miniaturised PCs. That is, they run applications. And when you want to perform some common task such as make a phone call, view pictures, or check your schedule, you have to think in terms of the application you must run in order to accomplish that task.

Windows Phone does not work that way, and that’s exactly why it’s so exciting. Instead, Microsoft has engineered this new platform to work the way you do, with a set of integrated experiences that blend content from a variety of locations, putting what’s important to you right up front and center. We’ll dive into Metro, discovering how it works, of course, but also why it works the way it does. We’ll also take a quick spin around the Metro UI, exploring the various available hubs and apps, setting up the deeper explorations that occur later in the book. Once you’re done with this section, you should “get” Windows Phone: Not just the where and how, but the why.

There are many ways to describe and explain Metro, but perhaps the most obvious is to examine how Microsoft describes this user experience internally. Let’s see how Microsoft’s view of Metro stands in the harsh cold

light of reality. According to Microsoft, Metro is the Windows Phone design language. It's called Metro because it's modern and clean. It's fast and in motion. It's about content and typography. And it's entirely authentic. If you noticed the subtle irony in this we can really examine these claims in the light of what Microsoft has actually accomplished with Windows Phone, some interesting trends emerge.

Modern and clean

The Metro user experience breaks with conventional thinking in the smart phone space and provides a UI that is modern and clean, or as I like to think of it, a UI that “gets out of the way.” If you’ve been around the tech space for a while, you know that this is how Mac fans describe Mac OS X and make the inevitable comparison with the busier Windows. This time, however, the tables are reversed, and it is Microsoft, not Apple, with the cleaner, less busy design. So the Metro user experience is simple by design. It features a lot of white space, or larger than expected areas of onscreen real estate that are left devoid of onscreen controls, in a nod to design simplicity. Microsoft says that Windows Phone has undergone a “fierce reduction of unnecessary elements” in the user interface. This is not a busy UI by any stretch of the imagination. This focus drives home Microsoft’s point that a Windows Phone is not a tiny PC, as were all previous Windows Mobile, Pocket PC, and Windows CE devices.

It is instead something else, something unique given its size and form factor. And this way of thinking differentiates Windows Phone from the iPhone and Android competition: Those phones work very much like mini-PCs, offering It is instead something this way of thinking competition. Those phones work an application-based experience where you must dive in and out of separate, siloed experiences.

Fast and in motion

While the iPhone and other smart phones offer some modicum of animation and mini-design flourishes that resemble a page turning or flipping up from the corner, Windows Phone deeply integrates animation and motion into the user experience, providing visual cues and feedback about the actions you make. And these animations and motion move at a rapid clip, thanks to the underlying power of the device’s CPU and GPU (graphics processing unit). There are transition animations as you launch applications, move between screens, or accomplish tasks. Considering the Spartan nature of

the Windows Phone user experience, these transitions play an important role, because they provide context for what you are doing, and where you are navigating within the UI..

You can see motion and animation in the live tiles on the Windows Phone Start screen as well. These tiles provide animations as a tease for what you'll see if you should tap them. The People tile animates with a moving kaleidoscope of your contacts' photos, for example. As Microsoft says, "live tiles use motion to engage the user, to pull them in." Motion and animation, of course, are hard to capture in the static screenshots found in this book. For this reason, we recommend getting your hands on a Windows Phone so you can see it in person. A Windows Phone feels alive and vibrant, ready for action, whereas your typical smart phone, iPhone and Android provide just a boring, static grid of icons; a UI that requires you to do all the work. With Windows Phone, you'll feel compelled to explore. It's an entirely different kind of experience.

Content and typography

In keeping with the use of white space noted previously, Windows Phone further differentiates itself from other smart phones by putting content front and center. Microsoft contends, correctly the phone will be a personal, intimate device; a life companion. So instead of designing the Metro UI with applications at the forefront, Windows Phone lets content be the interface. You no longer have to think about which application to launch when you want to access a favorite photo. Instead, you just access the Pictures experience, which combines photos and images from any number of applications and online services. That these locations contain not just your own photos, but photos from your friends and family too, is just the icing on the cake.



Clean UI

In pushing the content that most matters to you to the forefront, Microsoft has also de-emphasised the traditional user interface “chrome” that can clutter up other smart phone UIs. The Windows Phone chrome consists of window and screen frames, borders, toolbars, and so on UI features that are found by default in the user experience. The content is the UI, and you interact directly with that content. Thus, the phone works the way you think, instead of forcing you to think about the way the device organises things as the iPhone does. Of course, you can’t just push common UI elements off to the side without making some trade-off. After all, this isn’t a user experience for toddlers. So Microsoft has based the Metro user experience, heavily, on nicely typographic text, or type. And while the notion of textual menus and UI elements as beautiful may sound illogical what is this, DOS? in use, the Windows Phone user experience like that of the Zune HD before it is elegant, expressive, and attractive. As important, it’s highly usable.

Authentic

This bit is, perhaps, the hardest to swallow. It seems that Microsoft is pushing perhaps a bit too hard to establish its new user experience model as not just a viable alternative to the competition, but as a completely superior way of doing things. As Microsoft has noted, “It’s a phone, not a PC.” The point being that while Windows may make plenty of sense on a PC, it doesn’t make a heck of a lot of sense on a device with a 4-inch screen. So Windows Phone is authentic, or true, to the device. The hardware is simple and modern by design, as is the software. There’s no decoration and no ornamentation on either, and no need for it.

What sets Metro apart

On any smart phone, the so-called “start experience” is what happens when you turn the device on at the beginning of the day and start interacting with it. It’s literally the starting point for your interactions with the device. Windows Phone provides two start experiences. The first is the default Start screen, which provides a handy “glance and go” view consisting of a customisable grid of live tiles, which access underlying hubs (panoramic experiences) and applications. This view is brand new to Windows Phone, and unlike anything on other smart phones or, for that matter, other Microsoft products.

What's neat about these live tiles is that they can provide rich notification information, allowing you to discover, at a glance, what's going on without having to manually navigate to the underlying application. Consider something basic like the calendar. On the iPhone, the Calendar icon, like any other iPhone icon, can provide only textual notifications. So you can glance at that icon and see that you have one or two pending items in your schedule, but to find out more you have to launch the application. On Windows Phone, the Calendar tile comes alive with information about your next pending schedule item. There's no need to dive into the application. You can just glance and go. These rich

notifications can work on any live tile. The People tile animates with each contact's picture. The Pictures tile which spans across the width of the screen, occupying twice the space of lesser tiles will show photos stored on the device as well as those from various online services. The Xbox Live tile displays your avatar. And so on. Third parties, too, can create their own customised live tiles.

Windows Phone also offers a second start experience. This one will be more familiar to those of you with experience with other smart phones, because it presents a simple list of every single application installed on the device. Where the default Start screen is "glance and go," this secondary screen accessed by tapping the small arrow icon on the right side of the start screen is "get me there." Here, you'll find a scrollable list, similar to what was available previously in Windows Mobile 6.5 but formatted a bit differently, of every single app on the device. We will be discussing the Start screen and live tiles in more detail later in this chapter.

While some power users may prefer to swap out the Start screen for the more static apps list as the default UI, there is no way to do so. But even if there was, a caution against doing so: The visual, live tile-based Start screen is, one of Windows Phone's strongest selling points and is both useful and attractive.



The Start screen

Make phone calls

Even with a fancy smartphone like your Windows Phone 7 device, sometimes all one needs or wants from a phone is the ability to make a call. This section will show you all the different ways you can place a call from your Windows Phone 7 smartphone, including a few smart ways to get connected fast!

Dial a number

Know the number of your favorite chinese restaurant by heart? Dialing a number is a pretty simple affair.

1. Turn on your phone and unlock it. Then press the Phone live tile. It should display the current cellular network you're connected to.
2. A screen showing by default your call history, or recently called numbers shows up.
3. Tap the Keypad button at the bottom of the screen to bring up the numeric keypad.
4. Dial the number you wish to call and press call. If you wish to simply save the number to one of your contacts, you can press the save button. This will launch the contact picker, allowing you to attach it to an existing contact or create a new one.
5. While on the call, the screen shows an end call button , a keypad button that you'll use if you need to enter numbers while on the call (for example, navigating a customer service phone system) and a button with two small arrows that show more options. Tap that button to access in-call options.
6. The in-call options let you choose to activate the speaker phone, mute your side of the call so that the other party can't hear you sneeze, hold the call, and add calls to the current call or create a conference call.
7. When you're done with your call, click end call and the call will be terminated. You'll see that the number you dialed (or name of the person) now appears in the call history.



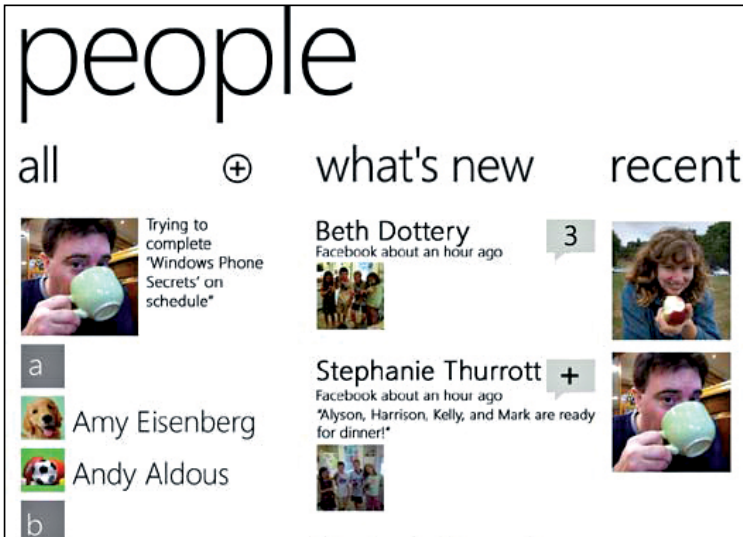
The phone interface

Dial a person from your contacts

Windows Phone 7 allows you to call people from your contacts through a few different ways. The following steps assume you're already in the phone dialer (showing the "call history" screen). However, you could also start from the Start screen and press the People live tile. We'll discuss more about this tile later.

1. From the phone screen, press the People button. A list of your contacts should appear.
2. Tap the name of the person you'd like to call.
3. A screen will appear listing the information you have stored about that person. From here you can tap on the text link to "call mobile" or "call home"
4. Tapping the text will cause the phone to dial, and you'll see a screen, with the same options available to put the call on speaker phone, mute, end, etc.

Windows Phone 7 offers a number of settings (described below) that let you modify how calls are made or received, as well as setting a PIN code required to make a call ("SIM PIN"). To access call settings, from the phone screen, press the Ellipsis button and choose "call settings."



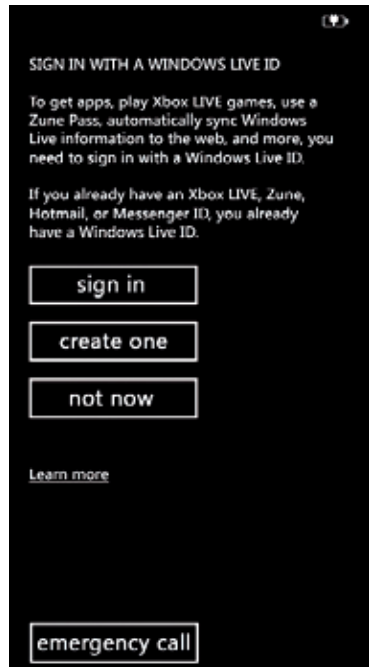
The People Hub

Set up accounts

Many of us don't have a single email account, while some of us have accounts that do much more than email, such as store our contacts or calendar. We also may have Windows Live or Hotmail accounts that let us log into various Microsoft services such as Zune, Xbox Live, MSDN, Technet, SkyDrive or a number of other things. And finally, it seems most of us have Facebook accounts that we use to connect with our friends and family. Your Windows Phone 7 device allows you to add all of these accounts, so that you can keep connected easily while on the go. This section will walk you through setting up a Windows Live account (two of them, actually!), a Microsoft Exchange account (such as one you might have at your workplace), a Google Gmail account, and a Facebook account. Along the way, you'll see how to enter in additional accounts, including a Yahoo! Mail account and a personal account you might have with your Internet service provider (ISP).

Add your Windows Live account(s)

It's easy to get and set up a Windows Live account (or Hotmail account, as it was known previously). Such an account is quite valuable because it lets you sign in to most Microsoft services; therefore, a single account can unlock a variety of neat things your phone can use. If you only have one Windows Live / Hotmail account, then it's easy to complete this series of steps—you can jump right in. However if you have multiple accounts, you should pay particular attention to the next paragraph! Your Windows Phone 7 device can support multiple Windows Live / Hotmail accounts. However the first one you sign in to, or add, is special.



Signing up with a Windows live ID

That's because your phone will treat this account as the account you want to use with Zune and Xbox Live.

If you've used either of these services before, it's important to sign in with your phone to the same Windows Live ID you've used previously for Zune and Xbox. Otherwise you won't get the same functionality out of the Zune and Xbox areas of your phone. Your phone will warn you about this when you add a Windows Live account; however, if you're unsure what Windows Live account you used for Zune or Xbox previously, you should find this information out before adding any accounts. This will enable you to make sure you add the correct account first. To find out what Windows Live ID your Xbox Gamertag is associated with, fire up your Xbox and sign in. Next, go to Settings . Account Management . Windows Live ID to get the account name. To find out what Live ID account your Zune Tag is associated with, open the Zune software on your computer and sign in. Next, right-click your profile picture and choose Switch User. The email address listed next to your profile picture on the Sign In screen is your Windows

Once you know the Windows Live ID you'd like to use, you're ready to add the account to your phone. (Of course, if you already signed into a Windows Live ID during the initial setup process described, you can skip these steps unless you have additional Windows Live IDs or Hotmail accounts you would like to add!) Follow these steps to add a Windows Live account to your phone:

1. Turn on and unlock your phone.
2. Tap the arrow in the upper right of the screen to bring up the applications list. At the bottom of the list, tap Settings.
3. Accessing account settings on your Windows Phone 7.
4. Tap email & accounts. 4. Tap add an account .
5. Tap Windows Live to add a Windows Live or Hotmail account.
6. If this is the first Windows Live account you're adding, you'll see a screen explaining how your first Windows Live ID will be associated with Zune and Xbox. Tap next to continue.
7. Enter your Windows Live username (including the part after the @ symbol) and password in the boxes provided, and then press sign in. Assuming you entered your information correctly, the account will be added.
8. If you have more than one Windows Live account to add, press the start button on your device and repeat Steps 2 through 7 until you've added all of your desired Windows Live accounts to your phone.

- If you've added an account with a Hotmail or Windows Live mailbox, then you'll see a new Live Tile on your start screen. Tapping it will let you view the contents of your inbox or send a new message

Add your Work Exchange / Outlook account

Many of us use Microsoft Exchange and Outlook at work to connect to and collaborate with others, schedule appointments, and keep track of our contacts. Your phone can access your company's Exchange server easily, enabling you to work with email, your calendar, and your contacts with ease. Follow these steps to get started:

- Turn on and unlock your phone.
- Tap the arrow in the upper right of the screen to bring up the applications list. Tap settings at the bottom of the list.
- Tap email & accounts.
- Tap add an account.
- Tap Outlook.
- Enter your Outlook email address and password in the boxes provided. This is the same username and password you may use to log into your computer at work or to access Outlook Web Access when you're not at work. Once you enter this information, press sign in.
- You may receive an error asking you to specify your domain name. If you know your domain name, enter it. If not, contact your company's technical support or helpdesk and ask for the necessary information; your company's support or helpdesk should be able to tell you your domain name and any other information your phone may ask for.
- Assuming there are no problems, your account should be added (you'll see it on the accounts screen).
- If you press the start button, you should also see a new Outlook live tile



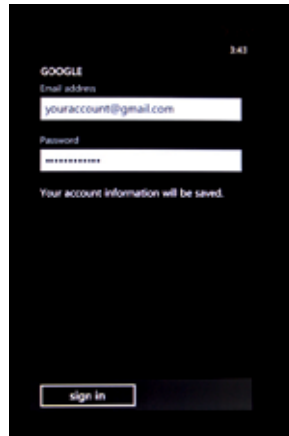
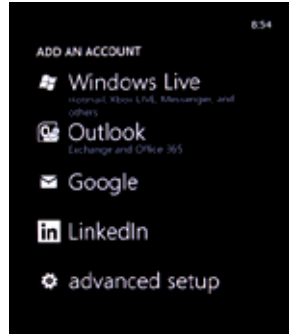
Add an Outlook account

at the bottom of your start screen. You can use this tile to access your Outlook inbox from your phone.

Add a Gmail account

When not at work, some of us prefer to use Google's Gmail service for our email, calendar, and contacts. Adding it to your phone is very easy. Follow these simple steps to do so:

1. Turn on and unlock your phone.
2. Tap the Arrow icon in the upper right of the screen to bring up the applications list. At the bottom of the list, tap settings.
3. Tap Email & Accounts.
4. Tap add an account.
5. Tap Google.
6. Enter your Google username and password, and then press sign in
7. You should now see Google added to your accounts list. If you use Google Calendar, you need to complete the following steps to have it synchronise with your phone (if you don't use Google Calendar, you can stop now—you're done!).
8. To add Google Calendar, tap Google in the accounts list. This brings up the advanced options for Google Settings.
9. Tap the box next to Calendar to check it, and then press the Checkmark button at the bottom to save your changes.
10. Your phone should now show the Google Calendar app, along with the other calendars you've added!



Set up Gmail on your WP7

Add other accounts

To add other accounts, such as a Yahoo! mail account or an account from your Internet service provider (ISP) or job, follow the same steps outlined previously. Obviously, Step 5 will require that you choose the appropriate account, which might include one of the following:

- ▶ Choose Yahoo if you want to add a Yahoo! mail account.
- ▶ Choose Facebook if you want to enter your Facebook account information.

This will provide a rich experience on your phone, enabling you to connect easily with friends; upload photos directly from your phone to Facebook automatically; and view Facebook pictures uploaded by your friends under the Pictures live tile. All you need to do to get started is enter your username and password for your Facebook account. Before you know it, you'll have the profile pictures and information for your friends right at your fingertips in the People live

- ▶ Choose other account: POP and IMAP if you would like to add a POP3 or IMAP account provided by your ISP, your domain hosting company, your job, or another service.
- ▶ Choose Advanced Setup if you have custom values you would like to enter directly. This is typically for more advanced users who may need to specify different ports or protocols to access their mail.

As you can see, adding accounts is easy. In the following chapters we'll discuss how to use the information these accounts have provided to your phone, including how to send and receive e-mail, manage your contacts, and work with your calendar! 📅



MEDIA APPS

Live tiles is such an amazing feature on the WP7. It allows you to manage all your media from one spot

The live tiles on Windows Phone 7 lets you seamlessly manage all your media – be it pictures, music or videos. The Pictures live tile on your home screen, for example, acts as a central hub for all pictures – whether shot on your phone camera or your friends', or externally uploaded to Facebook

The Pictures Hub

Windows Phone blows past all other mobile photo experiences with its Pictures Hub, which lets you, view both your own pictures as well as those that are shared by friends and family, and it does so seamlessly. It lets you customise this hub with your own imagery, using a picture that will

also automatically show up on the device's Start screen.

This is your phone, with your pictures, as well as pictures from those you care about most. And those pictures surface in surprising and entertaining ways, giving you a chance to enjoy memories and interact with those who are making memories of their own.

Learn about Pictures Hub

The Pictures hub is one of the most wonderful visual experiences on Windows Phone, but it's also the simplest to understand. Here, you can manage, view, and share photos, including those that you take with the phone's internal camera, those you sync to the phone via your PC, those you've shared online, and, perhaps most interestingly, those your family, friends, and other contacts have shared online as well.

Like other hubs, the Pictures hub is presented as a panoramic experience that can view one screen, or section, at a time. By default, you'll see three sections from left to right: Galleries, which lists the default photo galleries; a featured gallery; and What's New, which presents a dynamic feed of your contacts' photo-related online posts.

In the first section, you'll see three galleries called All, Date, and Favourites.

- ▶ **All:** Lists all of your picture galleries, including galleries of locally stored pictures (like Camera Roll, Saved Pictures and any synced pictures), as well as photos you're sharing from Windows Live and, if configured, Facebook.
- ▶ **Date:** This, meanwhile, organizes locally stored photos only, by date, and not according to folder.
- ▶ **Favorites:** This view displays those locally stored photos you've marked as favourites. We'll explain this feature later in the chapter.

Within any given gallery, you'll eventually reach a display of photo thumbnails, like the Date view. (The All view alone displays folders, not individual photos.) To view an individual photo, simply tap on a thumbnail. The photo will fill the screen as well as it can given the aspect ratio differences between it and your phone's screen. Note that you can rotate the screen to view landscape oriented pictures more naturally. You navigate between individual photos using your standard Windows Phone skills:



Browsing pics in the Picture Hub

You can flick the screen to go back and forth, pinch and double-tap to zoom, and tap Back to exit.

You can also perform various actions on photos (and on photo thumbnails) using a tap-and-hold method. Flicking over to the center of the Pictures hub display, you'll see that one of your locally-stored photo galleries has been surfaced up for quick access. There's no way to determine which gallery is displayed in this fashion. Instead, Windows Phone picks a gallery randomly. Over at the far right of the Pictures hub is its more enigmatic feature, the What's New section.

This works just like the What's New section in the People hub, but with an important difference. Instead of seeing all of your contacts' social networking updates, this feed presents only those updates that are related to photos. So you will see such things as Facebook and Windows Live-based shared photos, pictures shared on Flickr, and so on, depending on which services you've configured through Windows Live and which accounts you've configured on Windows Phone.

There is one major problem with What's New. While this section does make it easy to find the photos your friends and other contacts have posted online, it doesn't let you view some of them from inside the hub. That is, Windows Live and Facebook-based photos can be viewed normally. But if you click on a photo from Flickr, or some other second tier service (from Windows Phone's perspective), Internet Explorer will load and navigate to the appropriate page on the Web. You can, however, comment on posted photos directly from the What's New section. And that's true of any photo, not just those shared from Windows Live or Facebook.

Find your photos and videos

After you've captured some photos and videos with the phone's camera, you may want to enjoy (or share) them later. Of course, to do so, you'll need to know where to look. Windows Phone stores these pictures in the Pictures hub, in a special folder called Camera Roll. To find this folder, open the Pictures hub and tap the All link. Camera Roll is the first folder shown here, and will be in the top left of this gallery, next to and above other locally stored photos (like Saved Pictures and those photos you've synced from your PC), and above web-based photo folders from Windows Live Photos. If you tap on the Camera Roll thumbnail, you will view the gallery of photos and videos contained within. You can tap on an individual photo or video to view it, or swipe across a photo you're looking at to navigate to the next photo.



Transferring photos to and from your PC

Transfer photos to your PC

At some point, you're going to want to transfer photos between your Windows Phone and your PC. This works in both directions. There are photos on your phone, taken with the internal camera, or saved from the Web, that you may wish to back up in a high-resolution format, and the PC is ideal for this task. On the flipside, you may already have a collection of high-quality digital photos that you may enjoy carrying with you on the phone. Either way, you'll need to make a connection between the phone and PC to enable the photo transfer. And with Windows Phone, that happens exclusively through the Zune PC software. Because Zune is primarily an audio/video solution, you'll interact with Zune solely for the purpose of transferring photos. So you need to get it set up properly first.

Configure Zune for photo transfers

When you connect your Windows Phone to the PC, the Zune PC software should run. If not, you can manually start the Zune application via the Windows Start menu or taskbar. When Zune has detected your phone, it will display a Phone entry in its main menu and, possibly, navigate to the Phone Summary screen. Click the Settings link in the top right of the Zune application window to display Zune Settings. Then, navigate to Phone, Pictures & Videos to display options related to the phone's multimedia capabilities. There are three main options here related to photo transfers.

- ▶ **Import settings:** By default, Zune will copy all pictures and videos stored on the phone to your PC. These include pictures and videos taken with the device's internal camera as well as pictures you may have saved to the Web. You can optionally choose to automatically delete pictures and videos from the device after the content has been transferred to your PC. If you disable the automatic import feature, that doesn't mean you can't transfer photos from the phone to the PC later. You can still do so, using the technique I describe in the next section.
- ▶ **Default save location:** By default, Zune will save transferred pictures and videos from the phone to your Windows 7 Picture Library default save location. (This is C:\Users\username\Pictures normally.) Unfortunately, you cannot override this setting and instead save transferred photos and videos elsewhere. Instead, Zune simply provides an interface for Windows 7 libraries management, allowing you to change the default save location for pictures on a system-wide basis.
- ▶ **Image quality:** This option relates to pictures that are synced from the PC to the device, and not the reverse. By default, Zune will sync photos at their original dimensions and quality level. However, you can optionally choose to sync photos in other resolutions instead, which can save on-device storage space. These other options include device default (typically 800 x 480 or 480 x 800) and VGA (640 x 480). When you're done configuring Zune's photo transfer options, click OK to exit Settings.

Copy photos to the PC

Photos stored on your Windows Phone can be copied to your PC either automatically or manually. This is determined by the Import Settings option discussed in the previous section. If you've opted for the default, automatic transfer, Zune will transfer the photos and (camera-shot) videos from your Windows Phone as soon as it's connected. In fact, this often happens so fast you won't even notice it happening. If you've opted for manual transfer, nothing will happen when you connect the phone to your PC. (Well, nothing photo related anyway.) But you can still transfer photos (and videos) from your phone to the PC. To do so, navigate to Phone – Pictures in the Zune PC software. To manually transfer pictures from the device to the PC, select one or more pictures in the Zune PC software, right-click, and choose Copy to My Collection.

Share photos and customise your phone

Once you've begun stockpiling photos on your Windows Phone by capturing them with the internal camera, saving them from the Web, syncing them with your PC, or viewing them in online photo galleries, you may want to take the next logical steps. These include finding your favourite photos, sharing photos with others, and then customising Windows Phone in various ways with those photos. In this section, we examine all of these possibilities.

Finding Your Favourites

If you've spent any time managing and enjoying digital music over the years, you're probably familiar with the concept of a playlist, which is a way to organize a list of favourite songs so that you can play them back together at any time in the future. With pictures, Windows Phone supports the notion of a collection called the Favourites gallery. This gallery groups specially tagged, or identified, photos and lets you view them together regardless of their individual origins. So it works much like a playlist. It also works like the Favourites list in Internet Explorer (or the bookmarks you'll find in other browsers).

The Favourites gallery can be accessed from the first section in the Pictures hub, and if you just got your phone or haven't worked with this feature yet, it's highly probable that it's empty. (Otherwise, it's possible that your phone maker tagged some bundled photos as favourites.) Now it's time to add some favourites. There are two places you can save a favourite. First, in any photo gallery that contains locally saved pictures Camera Roll, Saved Pictures, or folders synced from your PC you can tap and hold on an image thumbnail to display a pop-up menu; choose Add to Favourites. Likewise, when you're viewing a photo—and, again, it needs to be a locally saved photo and not a web-based photo you can perform the same tap and hold action and choose Add to Favourites.

Once you've marked a number of photos this way, navigate to the main section of the Pictures hub and then tap Favourites. Here, you'll see a gallery of your favourite pictures, arranged in the order in which you marked them. You can interact with these photos in the same way that you do with photos in other photo galleries, but there is one important difference: Favourites is not a folder, and marking a photo as a favourite does not remove it from its original location. Instead, Favourites acts like a virtual folder in the desktop versions of Windows. That is, it contains links (or shortcuts) to the actual photos. It's a view, not a container.

Sharing Photos

Managing and enjoying photos on your own is enjoyable enough. But photos are meant to be shared. Fortunately, Windows Phone provides a few different ways to do this. You can manually share an individual (local) photo via any of your connected accounts by tapping and holding on that photo (or, in a gallery, on its thumbnail) and choosing Share. When you do, the Share page will appear, populated with a list of choices that will vary according to which accounts you've configured.

Possibilities here include:

- ▶ **Messaging:** You can share any locally stored photo with any of your contacts using the phone's integrated Messaging (SMS/MMS) utility.
- ▶ **E-mail:** You can e-mail a photo via any configured e-mail account (such as Exchange/Outlook, Yahoo! Mail, Gmail, Hotmail, or whatever). Pictures shared in this way are sent as e-mail attachments.
- ▶ **Upload to Facebook:** Using this option, you can upload a photo to your Facebook account. Note that if you're quick enough, you can tap the blank Comment box to optionally add some comment text to the picture before it's uploaded. (And yes, you do have to be quick: If the connection is good, Windows Phone will upload it before you get a chance!)
- ▶ **Upload to SkyDrive:** This works identically to Facebook sharing, in that you have to be quick if you want to add a comment.

Configure Picture Hub options

No discussion of Windows Phone's photo capabilities would be complete without a quick look at the Pictures + Camera settings screen, which provides some important configuration options. Remember that this screen is somewhat buried: You must navigate to Programs, Settings, and then Applications to find it. There, you will see the following options:

- ▶ **Allow the camera button to wake up the phone:** This is the key to Windows Phone's "pocket to picture" capability, so it's set to On by default.
- ▶ **Include location (GPS) info in pictures you take:** Windows Phone "tags" each photo you take with GPS-based location information, allowing modern photo management solutions, such as Google Picasa/Google Earth, to display maps of the locations where you took pictures. This feature is Off by default.
- ▶ **Auto upload to SkyDrive:** Windows Phone can optionally upload a low-resolution version of every photo you take with the internal camera to

Windows Live Sky-Drive, for automatic sharing. Because this can impact battery life and requires a data connection, it's disabled (Off) by default.

- ▶ **Keep location info on uploaded pictures:** If you manually or automatically share photos from Windows Phone, the GPS-based location data will be included with those photos. You may not want that, however, for privacy reasons. If so, set this option to Off. (It's On by default.)
- ▶ **Quick upload account:** You can configure either Windows Live Sky-Drive or Facebook as your Quick Upload Account, providing you with a slightly faster way to manually share photos to that account.

Zune: Music + Videos

One of the interesting design choices that Microsoft made with Windows Phone is that it doesn't really offer much in the way of PC/phone integration. In fact, if you plug a Windows Phone into a Windows-based PC using its USB charge cable, there's precious little you can do from there. Even after downloading drivers, Windows Phone won't show up as an icon in Windows Explorer, and thus it can't be used as a portable hard drive. And you can't download photos from the device using the built-in Windows photo acquisition software as you would with a traditional digital camera (or with competing smart phones).

As it turns out, there's only one thing you can do with your phone when it's attached to a Windows-based PC: You use Microsoft's Zune PC software to synchronise content—typically music, videos, and photo content—between your PC and the device. So for purposes of this discussion, I'll examine the initial PC-Windows Phone linkup via the Zune PC software,



Quick Play lets you quickly interact with your favourite songs

and then explain how this PC software can be used to sync digital audio and video content with your device.

You should connect your Windows Live ID to a Zune account for the best Windows Phone experience, so hopefully you've already done that. The next step is to download and install the latest version of the Zune PC software. You can find this software at zune.net. It doesn't make sense to provide a complete overview of the Zune PC software here, but I want to at least hit on the basics, so you can have some understanding of how the software is organized and how it works. The Zune PC software is divided into different views, which are accessed via the main menu of choices along the top left of the application. These include:

- ▶ **QuickPlay:** If you're not hugely interested in micromanaging your entire media collection, QuickPlay provides an optional interface for quickly interacting with key parts of that collection, including your favourite items (which can be pinned to this interface, similar to the way Windows Phone live tiles are pinned to the Start screen), new media items, recently accessed media items (called History), and a selection of custom playlists (like electronic, personal radio stations) called Smart DJ. QuickPlay, is the default screen displayed when you launch the Zune PC software.
- ▶ **Collection:** From here, you can gain access to your entire media collection, including music, videos, pictures, podcasts, channels (themed playlists that are constantly updated and, thus, even more like radio stations, but require a Zune Pass subscription), and mobile (Windows Phone and Zune HD) apps. Each media type provides different view filtering possibilities. For example, within the Music section, you can switch between artists, genres, albums, songs, and playlists. Video provides All, TV, Movies, Other, and Personal views. These views are all optimised for the content you're displaying. In Music - Artists, for example, you'll get a three-column view with an artist list, album thumbnails, and a song list, and as you select items, the views all change. But in Music - Albums, the view changes to display large album art thumbnails and a songs list column instead. Some views, such as Music - Playlists, provide only textual columns of information.

The Zune PC software integrates with the libraries feature in Windows 7 to determine which folders it "monitors." So it works with the built-in Music,

Pictures, and Videos libraries. It also adds a new library, called Podcasts, to Windows 7. If you add content to any of these locations in Windows, it will automatically show up in Zune and, thus, can be synced with your Windows Phone. This stands in sharp contrast to Apple iTunes, which forces you to manually drag media from the file system into the application. That is, iTunes can't monitor folders throughout your file system automatically, as can Zune.

- ▶ **Marketplace:** This provides in-application access to Microsoft's online store for Zune and Windows Phone. And while Apple has nothing to fear quite yet the iTunes Store is still unassailable from a breadth of content perspective the Zune Marketplace (or Windows Phone Marketplace as it's sometimes called as well) offers a lot of content. This includes music, videos (music videos, TV shows, and movies), podcasts (which are free and come in both audio and video varieties), channels (the aforementioned 21st century radio stations that require a Zune Pass subscription), and mobile apps. Zune Marketplace, can be accessed both from the PC and via your Windows Phone. But there are some advantages to doing so from the PC. First, the onscreen real estate is dramatically more spacious on the PC, and this can lead to a better experience depending on what you're looking for. Second, not all of the Zune Marketplace content is available from your phone. When you're on the go, you can only browse for, and download, music and mobile apps. To get at the rest of the content in the store, you'll need to be on the PC.
- ▶ **Social:** Because the Zune services are connected to your Windows Live ID, you can connect the two and share your musical preferences with your friends. Those contacts you have in Windows Live that have also connected with Zune will show up in the Zune Social, which is Microsoft's online community for music lovers. From the Social interface in the Zune PC software, you can see your friends' recent music-related activities (that is, which artists, songs, and albums they've listened to most recently and most frequently), view your own musical history and preferences (and, in a cute move, view your badges, which act as the Achievements you'd get on Xbox Live, only this time for music, not games), and exchange messages with friends. Zune Marketplace, as accessed from the Zune PC software.

- ▶ **Device/Phone:** Before there was a Windows Phone, Microsoft created several generations of Zune portable media players, and you can manage those devices including which content is synced to them via the Device section. If you have a Windows Phone, this section will be named Phone while that device is plugged in, but it provides similar functionality.

Choose media to sync with the phone

Even if you have a tiny media library, or a phone with a large amount of storage this section can be very helpful. The number one way to segregate music content you'd like to sync to the device from the wider collection of music you don't want synced is to intelligently create and use playlists. Zune supports two types of playlists, "regular" playlists, and auto playlists. Both are created in **Collection > Music > Playlists**.

- ▶ **Regular playlists** are just dumb buckets. You can copy content into them, rearrange the order of the songs, and then sync them with your phone. You create a playlist by clicking New Playlist in the Playlist UI.
- ▶ **Autoplaylists**, called smart playlists elsewhere, are much more intelligent and much more interesting because they are dynamic. That is, the content of an autoplaylist can change over time depending on certain conditions. For example, maybe you want to just sync your favourite songs to the phone. Zune uses a three-tier song rating system that utilises cute little hearts to denote whether you like a song. The three possible choices are Like (a heart), Don't Like (a broken heart), and Not Rated (empty heart). To create an auto playlist of just those songs you like, click New Autoplaylist to display the Autoplaylist interface

Creating this autoplaylist is simple: Give it a name, change the Rating field to "Like," and optionally change the song limit from 100 to another number (or just clear the field to include all eligible songs). When you click OK, your new autoplaylist is created.

Subscribe to podcasts

Like many other modern media player solutions, the Zune platform supports subscribing to, managing, and playing podcasts, and this is an interesting option for those who like to listen to the radio but want content that is tailored specifically to their interests, and isn't location based. Podcasts are audio or video recordings, as you'd find on the radio. Some are spoken

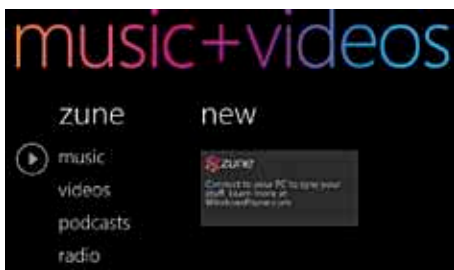
word, some are educational, and the quality is all over the map, though as with any other content type, there is some amazing stuff out there.

Unlike radio stations, however, podcasts are distributed over the Internet and are typically downloaded to a PC or device, rather than streamed live in real time. You can discover podcasts via the Podcasts section of the Zune Marketplace. Syncing a podcast to your Windows Phone is easy: Just navigate to the Podcast interface and drag and drop the podcast (or podcast episode) you want onto your phone.

Manage your music and video content

If you've spent any time with Windows Phone, you understand that it's a very compelling user interface are those scrolling, panoramic experiences that Microsoft calls hubs. There are a number of nice hubs built into Windows Phone, and two of them are specifically related to enjoying digital media content: Pictures and Music + Videos the subject of this section.

As is so often the case, the Music + Videos hub can vary dramatically depending on how you've configured your device. For example, if you've not synced with any PC-based digital media content, you're going to see a very empty UI. But once you've begun



The Music + Videos Hub

using Windows Phone as the ultimate portable digital media player that it is, your Music + Videos hub is going to fill up with content and explode with possibilities.

Looking over the previous images, you can see that the Music + Videos hub consists of a few basic sections. These include:

- ▶ **Zune:** This is the device-based Zune software, and it consists of interfaces for browsing through music, videos, and podcast content; an FM radio; and connectivity to the Zune Marketplace.
- ▶ **History:** Albums and artists you've listened to recently will appear in the History section, which can span across two or more screen widths in the hub. Also, the Now Playing panel will appear in this section.
- ▶ **New:** In the rightmost section, you'll see a collection of media that has

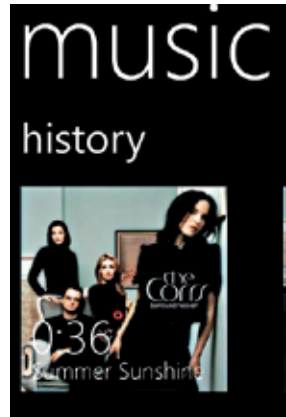
most recently been added to the device. This can include music, videos, podcasts, or any other content types supported by Music + Video.

From a presentation standpoint, the Zune section is displayed as a plain text list, but the other two default sections, History and New, utilise graphical thumbnails representing individual artists and albums.

Watch videos

The Zune Videos interface provides a simple front end to the video content you've synced from the PC and access to the even simpler Windows Phone media player. The interface

is divided along the same pivots as is the Zune PC software's Videos collection, with separate sections for All, TV, Music (music videos), Movies, Other, and Personal. There aren't a lot of options here. You can scroll through the lists to find the video you want. If you tap the video, it will begin playing, full screen or nearly so. And you can tap and hold on individual items to pin them to the Start screen or delete them from the device.



The Now Playing screen

Listen to the radio

The Zune Radio experience is pretty straight forward but comes with a few interesting twists. When you select Radio from the Zune section, you're presented with the simple radio interface shown on screen.

This interface has just a few elements to consider. In the center of the screen is the virtual radio dial. To scan for in-range stations, just flick left or right in the center of the screen and the radio will seek the next available station. When it finds one, it will stop. When you're tuned into a station, you will see information about the station name and, if the station provides RDS or RT+ signals, the currently playing song and artist name. You can press the Add button (which looks like a "+" sign and a star) in the top left of the screen to add the current station to your list of favourites. Additionally, a Pause button appears in the lower center of the screen; press this button to pause FM radio playback. Tap it again to resume playback. There's also a Favorites button in the lower left of the screen. Tap this to bring up the list of saved favorite stations.

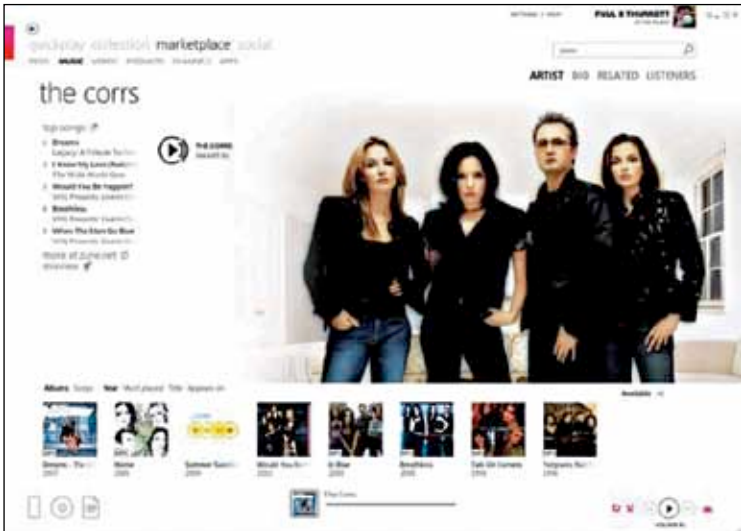
The Zune Marketplace

The Zune Marketplace is Microsoft's online store for digital music (purchase), music videos (purchase), TV shows (purchase and rent), movies (purchase and rent), and podcasts (free, and in audio and video forms). While the Zune Marketplace browsing experience is generally better on the PC using the Zune PC software, Microsoft does provide a basic interface to the Zune Marketplace on Windows Phone devices as well. This section quickly takes a look at both.

Zune Marketplace on the PC

On the PC, the Zune Marketplace is accessed via the excellent Zune PC software. This software provides a graphically rich way to discover new music, TV shows, movies, and other content. For the most part, purchasing content in Zune Marketplace on the PC is straightforward. There are, however, a few things you should know about.

- ▶ **Microsoft Points:** Inexplicably, Microsoft doesn't typically price items in the Zune Marketplace using dollars or local currency as they do on the device. Instead, the company forces you to use a micropayment system called Microsoft Points that has its own exchange rate. You can pre-purchase Microsoft Points in bundles of various amounts (where 400 Microsoft Points is \$4.99 in the United States, 800 Microsoft Points is \$9.99, 1600 Microsoft Points is \$19.99, and 4000 Microsoft Points is \$49.99). Or, if you don't have enough in your account to cover a purchase, you can buy them on the fly during your purchase.
- ▶ **So what's the price? And can I buy or rent?** And speaking of issues with buying content, Zune Marketplace often doesn't advertise the price of an item up front. This is particularly problematic with movies. Some movies are available for rent only. Some can be purchased or rented. And some movies can be purchased in High-Definition (HD) or standard definition (SD) formats. You won't know until you really dive in. And even then, you won't know what the price is until you click on the Buy or Rent button.
- ▶ **Rental silliness:** When you attempt to rent a movie, you're presented with the bizarre screen shown, though your own experience might admittedly be less confusing if you have fewer compatible devices. Unlike with Apple's iTunes Store, when you rent a movie from Zune Marketplace,



The Zune Market on the PC

you must choose at the time of rental which device you will use to watch the movie. (Compatible devices include your PC, a Zune HD device, or a Windows Phone.) You cannot later change your mind, either: If you choose Windows Phone, you can't watch it on your PC.

Zune Marketplace on Windows Phone

Compared to its PC-based sibling, the version of Zune Marketplace that's available on Windows Phone is significantly detuned, except for one significant improvement over its PC-based brethren.

The first issue is content. You can only browse music content from the device based version of the Zune Marketplace, and not music videos, TV shows, movies, or podcasts. That seriously limits the usefulness of this service on the go, requiring Windows Phone users to spend quality time with their PCs if they want to find new content online.

Second, the interface feels a lot less expensive than the Marketplace experience on the PC. And it's not just onscreen real estate: The selection of available music content is just limited. On the PC, you can quickly browse channels, playlists, the top 100 songs, music videos, numerous genres, new releases, recommendations, top songs, top albums, and top playlists, all from a single, rich screen.


Wi-Fi media sync



Marketplace on the Windows Phone device

While you must initially sync media between your Windows Phone and the PC via a USB cable, you can perform subsequent syncing, automatically, and wirelessly, via your home's Wi-Fi network. So anytime your phone connects to your home Wi-Fi network in the future, it will automatically and wirelessly stay up to date with the latest music, videos, podcasts, and other content that you wish to sync. To configure this feature, connect your phone to the PC and sync normally. Then, in the Zune PC software, choose Settings, Phone, and then Wireless Sync. Then, just step through a short wizard that determines which Wi-Fi network will be used for automatic Wi-Fi media sync. It's that simple.

Zune promiscuity

One of the best things about the Zune PC software is that it doesn't lock you into connecting your device to just a single PC, as does Apple's rigid iTunes software. You will typically configure a single PC to be linked with your Windows Phone for media sync purposes. But if you have multiple PCs, you can connect your Windows Phone to those PCs, as a guest, and copy content back and forth. You can use your Windows Phone as a conduit between two or more PCs, copying content back and forth between all of them, as long as you've logged on with your Windows Live ID on each. 



EMAIL

Considering the growing list of features a smartphone seems to have these days, a simple email functionality is still one of our highest priorities

The Windows Phone Mail application offers everything you need to manage email, including a highly optimised user interface and support for multiple email account types and multiple accounts of the same or different types. It utilises common email features such as flagged and urgent messages, attachments, CC and BCC support, and the reading of textual and graphical emails. It also works in either portrait or horizontal display modes, so you can manage mail the way you want to. What's interesting about Mail is that Windows Phone handles multiple

email accounts quite a bit differently than it does multiple contact or calendar accounts. You'll see why this is so, and how you can work around this odd limitation, as we explore Windows Phone's Mail application in this chapter.

Push Mail

Mobile communications has existed for almost as long as there have been mobile devices, though of course the advent of pervasive wireless network connectivity finally made this scenario both interesting and viable and, eventually, indispensable. Early PDAs offered simple communication solutions, including mobile email, but they required PC connectivity or, in rare cases, a mobile modem in order to send and receive messages over the air.

The first big breakthrough in mobile email came courtesy of Research In Motion (RIM), which started not with PDAs but rather with pagers, tiny mobile devices that utilized communications net-

works to send simple messages to customers. These pagers gradually morphed into the BlackBerry line of smart phones, which adopted email, web browsing, text messaging, contacts management, and other functionality, just as PDAs also morphed into smart phones by adding telephony capabilities. RIM's early experience in the wireless world gave it an interesting advantage in certain areas, and the company was the first to offer what's now called "push" support for email, as well as contacts and calendars. Previous to push, mobile devices would occasionally poll servers wirelessly for new data and then sync whatever changes had occurred. But push technologies perform the same feat in a far more efficient manner:

Instead of requiring clients to blindly ask for changes on a schedule, push-based services simply "push" changes down to the clients, and they do so only whenever a change occurs. The result is that devices get better overall battery life since they're not constantly sending out wireless feelers.



Windows Live is just one of the many accounts you can check on your WP7

The BlackBerry push technologies were so successful that the rest of the industry simply copied RIM and added similar functionality to their own products. Microsoft added push support to Exchange Server and its Windows Mobile product line in 2007, as did Apple, tentatively, with the first iPhone. Over the intervening years, Apple broadened the iPhone's support of push. Today, no modern smart phone platform would be complete without push support, not just for email, but also for contacts and calendar. And while Windows Phone does support pre-push technologies, it is optimized for push-based email support.

Accounts and email

Creating and properly configuring a Windows Live ID is key to the Windows Phone experience. When you log on to your phone with this ID, you're creating an account on the phone. And this Windows Live, based account is considered your primary account because it interacts with a variety of web-based services that are central to Windows Phone and, perhaps more important, unique to this ID. Web services that can only be connected to your primary account include your Messenger social feed (which populates the What's New lists in the People and Pictures hubs), Xbox Live account, Marketplace account (for Zune-based content as well as apps and games), Zune Pass subscription, OneNote note-syncing, Windows Live photo posting, Find My Phone, and more.

This primary account is also used for contacts sync with the People hub, calendar sync with the Calendar app, and, if you enable it explicitly, email as well. These services are available via a number of account types, not just your primary account. So depending on the type(s) of accounts you've configured, you may have an interesting mix of services providing email, contacts, and calendar data to your phone.

Email is, perhaps, the most basic of these services because it is the most common among the different account types. In fact, when you examine these account types, you'll see that all of them offer email except Facebook. Some of them, in fact, offer only email. And when you combine that fact with another interesting Windows Phone tidbit, that you can have multiple accounts of the same type configured on one phone, you can see that it's possible that you could have an awful lot of email happening on that little device. So it's a good idea to get it right.

Before continuing, we'll take a quick look at the account types you can configure in the Email & Accounts settings interface for email. These include:

- ▶ **Windows Live:** This account type can be configured as your primary account (email, contacts, calendar, photos, feeds, and more) or as a secondary, normal account with email, contacts, and/or calendar sync. You must have at least one Windows Live account, which functions as your primary account. But you can configure multiple other Windows Live accounts as well.
- ▶ **Outlook:** Designed for Exchange-type servers, this account type works with email, contacts, and/or calendar data. But it's not just for Exchange. In fact, the Outlook account type will work with any account that uses EAS on the back end. And that's a surprising number of services, including Gmail/Google Calendar, Microsoft's Hotmail, and many others.
- ▶ **Yahoo! Mail:** This account type is for email only and uses the IMAP prototype to synchronize the view on your phone with your server-based email. IMAP is superior to the older POP3-style email accounts that were common a decade ago, but unlike EAS, it works only with email.
- ▶ **Google:** Microsoft explicitly supports Google's Gmail (for email and contacts) and Google Calendar because the services are so popular, but it's not much harder to configure this account type using the Outlook option. Behind the scenes, the accounts are configured the same way, using EAS.
- ▶ **Other account or advanced setup:** If the email account you're using doesn't fall neatly into one of the above categories, you can use one of these options to configure the account on Windows Phone. Both work similarly, are designed explicitly for email only (no contacts or calendar), and will work with virtually any email account there is, regardless of the required access protocol (POP3, IMAP, or whatever).

Okay, so here's a recap. You must have a primary (Windows Live based) account, and you may have any number of other accounts, including multiple accounts of the same type. Depending on the type, these accounts will provide access to different services, including email, contacts, and calendar.

With contacts and calendar services, Windows Phone provides a single, integrated experience that lets you view the content from multiple services in a single place. With contacts, that place is the People hub. With calendars,

it's the Calendar app. In both cases, you can view and interact with multiple accounts worth of data, all in one place. That is not how email works. In fact, Windows Phone handles email in a way that is completely the opposite of how it handles contacts and calendars. More important, maybe, the way Windows Phone handles email is also in opposition to the Windows Phone mantra of integrated experiences. Put more simply, there is no such thing as a unified inbox on Windows Phone, a feature that is common to other smart phones such as the iPhone or those based on Google Android. Instead, Windows Phone creates a different Mail application for each configured email account.

That may sound counterproductive. And certainly, there is room for debate on this one. But there's no debating that Windows Phone does work this way. It's not perfect. But depending on your situation, it could make a big difference. Of course, you may actually want to access all of your email accounts separately. If that's the case, just use Windows Phone as Microsoft intended. For each email account you create, Windows Phone will create a new email application in the All Programs list. And you are free, of course, to pin as many of them as you'd like to the Windows Phone Start screen too.

Using mail

If you enjoy the rich graphical user interfaces in hubs such as Pictures or Music + Video, the Windows Phone Mail application might come as a bit of a shock. By default, it presents a stark interface, with black text on a bright white background that Microsoft claims is ideal for the primary email activity of reading. Calendar, though also text-based, uses white text on a black background by default.

Try to get over your initial impression of this application because it's actually a highly efficient and capable email solution. If you've spent any time at all with mobile email solutions on other platforms, you'll understand why immediately. The key to this success is Windows Phone's pivot-based, single screen application user interface, which is used to nice effect in



You can see flagged and urgent email as well

Mail. Rather than bore you to tears with an interface based around folders, remember, Windows Phone works the way you think rather than force you to understand how it works. Mail instead presents commonly needed email views such as all email, unread email, flagged email, urgent email. Mail starts up in the All (for “all e-mail”) view. But you can easily swipe the screen horizontally to pivot, or navigate, through the other views. The Unread view, for example, displays only those e-mails that are currently unread. The Flagged view displays those messages that are said to be flagged, a Microsoft invention that is used heavily throughout the software giant’s many e-mail applications, servers, and services. In the Microsoft world, a flagged message is one that requires follow-up. So you can “set” a flag on an e-mail, and “clear” a flag, which is like removing the flag. But good worker drones will “complete” a flagged message, meaning that they followed up as required.

In the Urgent view, you see those messages that have been specified by the sender as having an urgent priority rating. By default, emails are sent with a normal priority rating, and while it’s even possible to specify low priority in some email solutions, including Mail on Windows Phone, that’s rarely used. How is this different from a flagged message, you ask? Primarily in two ways. First, it’s a de facto industry standard in the sense that virtually every email solution supports creating and understanding urgent mails. And second, as noted previously, this rating is applied by the sender, not by the receiver, as is the case with flagged emails.

Triaging email

Receiving hundreds of email messages every day has become a common phenomenon, and one can’t and doesn’t want to read every single one of them. The reasons for this are pragmatic, and should apply to your own email as well. Much of the mail is unwanted, such as mailing lists that inadvertently



Selection boxes in mail

are signed up for online, or advertisements. The occasional spam email, too. A step up from that are the emails you do want to get but don't always require a lot of attention: Google news alerts etc. And then there's real important email. These emails may require research and thought, and in many cases deserve responses. Whatever kinds of email you get, one strategy for dealing with the volume, especially at the start of each day, is to triage your email, or go through the list and apply actions to blocks of email in bulk. And this is a task that good mobile email solutions, including Windows Phone's Mail, excel at.

To triage your email in Windows Phone, launch the Mail app. It will appear in the All view, as always. First, just delete the unwanted mail. To do so efficiently, tap the Select button in the Application Bar; it resembles a list of checked items and is the third of the four available buttons. This changes the view a bit, adding a selection box next to each email message header. Now, scroll down the list and locate any messages you can safely delete. Tap the selection box next to each of the messages. When you're done, you can apply a number of actions to those messages as a group, but of course in this first pass the goal is to permanently delete the unwanted mail. So tap the Delete button in the Application Bar. Now all those messages are gone.

Hopefully, this has dramatically pruned your list of unread e-mail. The next thing you do is read, then file those messages you want to save but don't need to act on. Just tap the Move button instead of Delete when you're ready, and then select a folder to which to move those messages in the pop-up folder list that appears. (This list will vary from e-mail account to e-mail account, since each e-mail account and service uses a slightly different folder management structure, and of course, you may have created your own folders as well.)

Actions you can apply to multiple messages include:

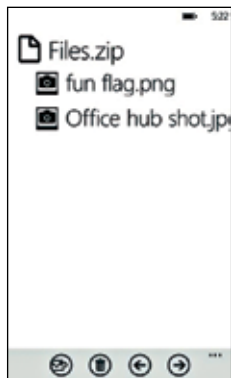
- ▶ **Delete:** This permanently deletes the selected message(s) as noted previously.
- ▶ **Move:** This permanently moves the selected message(s) from the inbox to whatever folder you specify.
- ▶ **Mark as read:** This makes it appear as if the selected message(s) are read (even if they were never read).
- ▶ **Mark as unread:** This makes it appear as if the selected message(s) are unread (even if they were actually read).
- ▶ **Set flag:** This marks the selected message(s) as flagged.

- ▶ **Complete:** This marks the selected flagged message(s) as completed.
- ▶ **Clear flag:** This marks the selected flagged or completed message(s) as cleared (or “unflagged,” or like any other e-mail message).

Attachments

How Mail responds will depend largely on the type of file you’re opening. Some common attachment types include:

- ▶ **Office documents:** Word documents, Excel spreadsheets, and PowerPoint presentations will open in the appropriate Office Mobile application. From there, you can view the document or save the document to the phone for later use.
- ▶ **Text files:** When sent via email attachment, text files open in Word Mobile.
- ▶ **Picture files:** Common image file types will open in Windows Phone’s internal image viewer. You can tap and hold on these images to save the picture to the phone or set it as wallpaper for the lock screen.
- ▶ **Music and video files:** Common multimedia file types will open in Windows Phone’s system media player and begin playback.
- ▶ **ZIP files:** Windows Phone natively supports the ZIP compressed file archive format. When you open such a file from within Mail, you will see the contents of the ZIP file in a full-screen display. From here, you can open individual files inside the ZIP file as you would normally.



Opening ZIP files

Configure mail and mail accounts

As you know, each email account you configure for Windows Phone is accessed from a different version of the Mail application. So if you have configured multiple email-type accounts, you will have multiple Mail applications in All Programs, with names like Gmail, Hotmail, Outlook, Yahoo! Mail, and so on (or whatever names you may have used). This has some interesting ramifications in day-to-day use that is, you must access different applications to read all of your mail but it also means that you have multiple email accounts to configure.

When you create an email account (or any account that includes access to an email service), Windows Phone applies default values to various

options. And these options may not be optimally configured for your needs. So you're going to want to take the time to walk through these steps, once each for each of your configured email accounts. It's a bit monotonous if you have multiple accounts. But you'll agree it's worth it when you discover, say, that one of your accounts isn't even automatically downloading mail to the phone. You can configure an individual email account in one of two ways. The most obvious is to navigate to **All Programs > Settings > Email & Accounts**, and then pick the account you wish to modify.




Configuring Outlook

Or, instead of that first way, you can manually launch one of your email accounts, either via its Start screen-based live tile, or from within the All Programs list. Then, tap the More button and choose Settings. This will display the Email Account Settings screen. Why go through this convoluted process? Because this screen has a single, additional option you won't find if you try to configure the account through the Email & Settings interface: Use an Email Signature. If you want to change this from the default option – Sent from Windows Phone – or, more likely, just want to turn it off, you can do so right here. You never would have found this option if you had gone with Plan A.

With that out of the way, tap the giant Sync Settings button. This will display a more complete Settings screen. This has a wide range of configurable options, much of which is obvious. But there are a couple options that are quite important and quite possibly are misconfigured. These are:

- ▶ **Download new content:** This option determines how frequently the phone synchronizes with the email server. The possibilities vary here from account type to account type. For example, for Yahoo! Mail, you can only choose between every 15 minutes, every 30 minutes, hourly, every 2 hours, and manually. (And, oddly, for Yahoo! Mail, every 2 hours is the default.) More sophisticated e-mail services those that offer “push” e-mail support through Exchange ActiveSync and similar technologies will offer an additional choice, as items arrive. This is the optimal choice for these types of accounts, which include Windows Live, Outlook, and Google.

- ▶ **Download e-mail from....:** This option determines how far back to go when syncing with the server, and the further back you go, the bigger your bandwidth and storage requirements are. Available choices include the last three days, the last seven days, the last two weeks, the last month, and any time. (Not all accounts will offer all of these choices, however.) For most account types, the default is the last seven days.

Once you've evaluated and potentially changed the settings for one account, you'll want to do the same for each configured e-mail account. You'll probably find, that each is configured a bit differently, depending on the source, and that you'll need to do some tweaking. 



OFFICE APPS

Who better to bring office applications to the smartphone than Microsoft?

This isn't the first version of Office that Microsoft has released for its smart phone OS, of course. But it is the most full-featured so far. Thanks to a new emphasis on the tasks that make the most sense for mobile devices note taking, over-the-air connectivity with your workplace's document repositories, and excellent word processing document, spread sheet, and presentation viewing capabilities, along with basic editing functionality, Office Mobile is a great companion for any Microsoft Office user.

It also takes advantage of the unique capabilities of today's Windows Phones, with touch and gesture support, integration with the virtual keyboard and its on-the-fly suggestion functionality, and a cool new hub-based

interface. So Office Mobile looks and works like an exemplary Windows Phone app.

Office Mobile

Originally dubbed Pocket Office, Microsoft's mobile version of Office debuted a decade ago as part of the Pocket PC platform. Originally, it consisted of Pocket Outlook, Pocket Word, and Pocket Excel, and over the years PowerPoint and OneNote applications were added as well. Eventually, the Pocket was for the more professional sounding name Office Mobile.

Prior to Windows Phone, Office Mobile was delivered as a traditional set of Windows Mobile type apps, with the exception of Outlook, which was (and still is, in Windows Phone) divided into separate mini-applications for e-mail, calendaring, and contacts management.

On Windows Phone, Office functionality is provided via a hub, or panoramic experience, that spans across several screens. When viewed as a single entity, the Office hub is a sweeping, widescreen experience with multiple sections, or columns, each providing its own unique Office related functionality.

The Office hub provides the following sections, from left to right:

- ▶ **OneNote:** Right up front and center, and imbued with new importance as a result, is the OneNote Mobile experience, which provides you with quick access to notes and note-taking functionality.
- ▶ **Documents:** From here, you can create new Word documents, Excel spreadsheets, and PowerPoint presentations. You can also access existing documents of these kinds that are stored on the phone.
- ▶ **SharePoint:** If you utilize a SharePoint document repository at your workplace, you can configure your phone to automatically connect to that server so that you can easily view, edit, and work offline with documents between your phone and work.



Creating a new note in OneNote

Office Mobile features

As you might imagine, given the constrained environment of a typical Windows Phone screen, Office Mobile doesn't provide much competition for the PC-based versions of Office, or even the Office Web Apps for that matter. But it wasn't designed for that purpose. Instead, Microsoft sees Office Mobile as a companion for the Office user on the go, and it's best, to understand this fact and what that means when it comes time to actually use Office Mobile on Windows Phone. That is, you need to be realistic about the capabilities of this solution and understand what it is that it can and cannot do.

Office Mobile is a great way to view Office documents and from now on, unless specified Word documents explicitly, documents refer to Excel spreadsheets, PowerPoint presentations, and OneNote notes here as well even rich Office documents, on the go. If all you're looking for is a document reader, Office Mobile is a fantastic solution, and it's compatible with even the very latest document formats used by the PC applications in Office 2010. Office Mobile is also a decent solution for editing Office documents, even rich Office documents, on the go. One of the issues with this functionality is that Office Mobile cannot accurately display some of the more complex document layouts supported by modern Office application versions. But you can generally work around these issues, and it does a great job of retaining underlying formatting even when these elements aren't accurately rendered onscreen. If what you need to do is read a document and make light edits, Office Mobile works quite well. Office Mobile is a great solution for synchronizing Office documents between your phone and your work-based SharePoint document repositories. It also respects and understands enterprise-oriented Information Rights Management (IRM) technology, which is used to secure documents. If you are a OneNote user and it's very clear that Microsoft intends to make you one or just someone who likes to take notes frequently, OneNote Mobile for Windows Phone is a first-class note-taking solution.

Office Mobile is somewhat lacking for those that wish to access SkyDrive-based Office documents and completely lacking if you want to sync them between the Web and your phone. If you want to create new Word or Excel documents, Office Mobile is a decent solution that lacks only the more



List of available notes in OneNote

complex formatting options that are available on the Web and on the PC. However, if you save these documents externally to the phone, you can later edit them again in Windows or on the Web and add complex new formatting easily enough. If you want to create new PowerPoint presentations on the go, you're out of luck: You cannot create a new presentation with PowerPoint Mobile. (That said, you could of course create basic, empty presentations and save them to the device as templates for future presentations. It does support Save As.)

The Office Hub

In previous Windows Mobile versions, the available Office Mobile applications were accessed individually. That is, you could find and launch Word Mobile, Excel Mobile, PowerPoint Mobile, or OneNote Mobile (or the Outlook-based e-mail, calendar, and contacts solutions) individually. In Windows Phone, that is no longer the case. In fact,

aside from the e-mail, calendar, and contacts solutions built into Windows Phone, there are no individual Office applications outside of the Office hub. So if you want to access any Word, Excel, PowerPoint, OneNote, or SharePoint Workspace functionality on Windows Phone, you'll need to do so through the Office hub.

As noted previously, the Office hub consists of four sections, and provides access to five Office Mobile experiences: OneNote Mobile, Word Mobile, Excel Mobile, PowerPoint Mobile, and SharePoint Workspace Mobile. I discuss each of these solutions in turn in the following sections.



Word Mobile is a cool addition

Access online documents

If you believe that the future of computing is both mobile and connected, then it stands to reason that Microsoft's mobile platforms and various connected

services probably have a lot to offer in the way of integration. And that's certainly true enough, as you're learning throughout this book: Windows Phone connects to an amazing array of Microsoft and third-party services, and these connections are in many ways what makes Windows Phone so exciting.

When it comes to accessing Office-based documents in the cloud, however, Microsoft's consumer-oriented and business-based tools take decidedly different approaches. One is seamless and automatic, but priced according to the needs of businesses. The other is free and available to all, but is unfortunately limited as well.

Using Windows Live SkyDrive

Windows Live SkyDrive is Microsoft's online storage service and it provides everyone with a Windows Live ID with free access to 25GB of web-based storage. That sounds like a lot but Microsoft really does do everything it can to prevent users from accessing that storage efficiently or easily. For example, Microsoft provides no way to access SkyDrive storage via the Windows Explorer interface in desktop versions of Windows, preventing users from dragging and dropping files between their PC and the cloud.

Likewise, on Windows Phone, there's no integrated, seamless way to sync documents between your phone and SkyDrive. Oddly enough, Microsoft does provide this functionality for the business-oriented SharePoint service, however. Why this disparity, Simple: Whereas SkyDrive is free, corporate customers pay Microsoft a lot of money, directly or indirectly, in order to use SharePoint. Thus, their lives are made easier.

So in the world of the haves and have-nots, SkyDrive users are decidedly in the have-not camp. But that doesn't mean you can't access SkyDrive-based documents from Windows Phone. You just have a bit more work to do. Here's how to make it happen.



Viewing SkyDrive-based office documents

The first step is to connect to your SkyDrive-based document repository, which can be found at office.live.com on either the PC or the phone. You'll need to use Internet Explorer to access this site, and then log on with your Windows Live ID if it's not already set to auto-logon.

What you'll see here will vary depending on whether you've ever used or customized the site. If you're new to SkyDrive from an online document perspective, it will be empty but for a few stock folders like Personal and Shared. Otherwise, you'll see a list of folders and documents.

To view a Word, Excel, or PowerPoint document in a scaled-down,

read-only mode, navigate through the SkyDrive interface and then tap on the appropriate file. It will display right in the browser, using a very limited version of the Office Web Apps. The ability to view Office documents directly in the browser is a good one, but it's limited in that complex documents especially Excel spread sheets and PowerPoint presentations don't display in very high fidelity. To overcome this, and view the document in a more capable Office Mobile application, you can download it to the phone.

To do so, click the prominent Download link at the top of the page that's displaying the Office document. This will trigger the interesting display. Then you can tap the icon as instructed to download the file. From here, you can of course view the document in a much higher fidelity environment than is made available through Internet Explorer. If you tap the Back button, however, you'll return back to IE, and the document will not be saved to the phone.

You may want to save the document to your phone, however. To do so, tap More and then Save As. This will display the Save to Office Hub screen. Rename the document if needed and then tap Save.

To see that the file is saved, tap Start and then launch the Office hub. If you scroll over to the Documents section, you'll see that the saved document is now at the top of the list.



Saved web-based documents

Using SharePoint

For those few users who have access to a SharePoint document repository, the Windows Phone picture is considerably brighter, and certainly more seamless, than it is with Windows Live SkyDrive. That's because Microsoft has built an incredible SharePoint client right into the Office hub. SharePoint, for those who aren't aware, is one of the most successful platforms Microsoft has ever created. It's a server product that installs on top of modern Windows Server versions, providing collaboration and web-based publishing functionality to business users. In fact, SharePoint is a jack-of-all-trades type solution, which is part of the reason for its huge success: Businesses use SharePoint to create web sites, web portals, intranets and extranets, content management systems, wikis, blogs, and other types of web-based content sites.

Another, equally important aspect of SharePoint's success in the corporate world is that it's self-servicing. This means that information workers who wish to set up a site for document collaboration or other purposes can do so immediately, via a simple web-based interface, and without having to grovel to busy administrators and IT professionals who are probably already busy with other tasks. Using a simple delegation model, admins can configure SharePoint once and then leave the company's workers free to go about their business.

We are not going to provide a thorough SharePoint overview here as it is out of the scope of most regular users. You either have access to SharePoint or you don't. If you do, you're in luck, because Windows Phone has incredible SharePoint integration functionality. If you don't, you can look to this integration as a clue to what future SkyDrive integration could look like. Indeed, from the perspective of users, SkyDrive and SharePoint work similarly in terms of document storage and access. Why Windows Phone ships with vastly superior Share-Point integration is unclear.

The SharePoint client on Windows Phone is called SharePoint Workspace Mobile, and it is exposed as a prominent part of the Office hub. In fact, it occupies fully 50 per cent of the Office hub panorama, or the two rightmost sections, or columns. If you haven't yet connected to a SharePoint site, you can do so now by tapping the Open URL button. Then, type in the address of your SharePoint Server. You'll be prompted for a username, password, and domain as well.

When you make the connection, SharePoint Workspace will list the various server-based libraries and lists that are available to you. To inves-

tigate what's available, navigate into one of the libraries or other locations. There, you'll see a list of documents. From here, you can do a number of things, including those tasks listed next.

Available via the More menu, **Bookmark This Link** will create a bookmark, or shortcut, to the current SharePoint location in the SharePoint Workspace Links list. It will also be added to SharePoint Workspace's second section, or column, which includes a list of recently accessed SharePoint locations. (This new item will appear under the bookmark that was automatically created for your SharePoint server when you first made the connection.) The bookmark works just like a live tile or an Internet Explorer Favourite; when you tap it, you go right to that location.

To download a document from SharePoint to your phone, tap and hold on the name of the document to display the pop-up menu. Then, tap **Download Now**. In place below the document name, you'll see a message that the document is downloading until, eventually, the message changes to "Downloaded." You can now access this document at any time from the SharePoint Workspace Mobile section of the Office hub; the first pane provides a list of recently accessed documents.

To view a document in the current SharePoint library, simply tap it in the list. SharePoint Workspace will connect to the server, download the document, and make it available for viewing. Downloaded documents can also be edited. In Word Mobile or PowerPoint Mobile, tap the **Edit Application Bar** button to begin editing. In Excel Mobile, editing can begin immediately.

If you do make changes to a SharePoint-based document and exit that document, you'll be prompted to save the document. If you choose **Yes**, the changes will be saved to the document on the server as well as to the local copy. And if this is the first time you've done so, you'll be prompted to enter a username for yourself as well.


If you've edited a SharePoint-based document and would like to contact a friend, someone you're collaborating with, about the changes, you can do so right from within SharePoint Workspace Mobile. To do so, tap and hold on the document name in library view. When the pop-up menu appears, tap **Send Link**. Windows Phone will display a **Send From** screen, and you can choose between **Messaging** (standard SMS text messaging) or any of your configured e-mail accounts. In either case, a web URL to the edited document will appear in the message automatically.

You can mark individual documents on SharePoint so that they are always available offline, which in this context means, "when you're not

connected to the server.” That way, you can ensure that you have an offline copy to work on should you be in a disconnected state. To do so, browse a SharePoint library and find the document you’d like to mark. Then, tap and hold on the document name and choose Always Keep Offline from the pop-up menu that appears. This will ensure that the document in question is kept on the phone. Changes you make to this offline document will still be synced to the server. So if you’re connected when the changes occur, it will be synced immediately. Otherwise, changes will sync when you are later connected.

Configure Office Mobile

If you take a peek at the Settings interface for Office (which is listed as Office 2010), you’ll find a couple of useful items to configure. These include:

- ▶ **Username:** Office Mobile is supposed to pick up the name of the registered phone user but has never actually done that in my experience. If you haven’t yet configured this information Office Mobile will ask you if it needs it you can do so here.
- ▶ **SharePoint:** There are numerous options related to SharePoint Workspace Mobile, including a way to clear the cache and thus delete all temporary SharePoint files and history, a simple file conflict management interface, a way to configure the phone for Forefront Unified Access Gateway (UAG, Microsoft’s server-side security product—your administrator can provide this information if it’s needed), and more.
- ▶ **OneNote:** Here, you can determine whether OneNote Mobile automatically syncs notes with Windows Live SkyDrive. It’s a simple On/Off option, and when it’s set to On, notes will sync anytime you open a note page, save a note page, or open a note section. 

THE GAMES HUB



Gaming is taken to a whole new level on the Windows Phone. It also definitely helps if you're the maker of one of the most popular gaming consoles, the Xbox

Looking over the minimum hardware specifications for Windows Phone, a suddenly obvious thought emerges: This thing looks like a mobile gaming device. And that's not a happy coincidence. When Microsoft decided that it would rein in the hardware diversification that doomed its previous mobile platform, Windows Mobile, it also decided to shoot for the moon. So all Windows Phone devices include some pretty serious hardware.

- ▶ 1 GHz or 33 faster microprocessor
- ▶ A DirectX 9-capable graphics processing unit, or GPU, for hardware-accelerated 3-D graphics
- ▶ At least 256 MB of RAM and 8 GB or more of flash storage

- ▶ A capacitive touch-based display with four or more contact points and support for only two possible resolutions, 800 x 480 (WVGA) and 480 x 320 (HWVGA)
- ▶ An accelerometer

Each of these components reads like the description of a dedicated gaming device. And every single one of these components is inside of your phone. From a hardware perspective, then, Windows Phone is a great gaming platform. It provides the features developers want, but is also a consistent target for developers since the hardware support is universal across devices. With Windows Mobile, there were so many processor architectures, so many CPU clock speeds, so many screen resolutions and other differences, that making even a simple game run properly across devices was almost impossible. On Windows Phone, it's not just possible, it's easy, and since the basic hardware requirements are so high-end, developers won't need to cater to the lowest common denominator.

It gets better. Developers will be able to more easily port existing PC and Xbox 360 games to Windows Phone. They'll be able to write games that work on all three systems. And they'll even be able to write certain classes of games where gamers can compete against each other from different platforms. In the beginning, this interaction will occur only between Windows Phone and Windows-based PCs. But it will be extended to the Xbox 360 over time.

The key to this gaming interaction between Windows Phone, Windows and the Xbox 360 is an evolving software stack that's present in Windows Phone, on Windows PCs and on the Xbox 360 console. It includes three key pieces:

- ▶ **Silverlight:** Essentially an application framework and runtime environment based on *Microsoft's .NET* managed code libraries, Silverlight is also the basis for the Windows Phone OS. So when developers create Windows Phone applications, they do so in Silverlight. And many games, especially casual games, will be written within this environment as well. Some portability exists between Windows Phone apps and the Silverlight environment Microsoft has created for Windows and the Web.
- ▶ **XNA:** The most advanced and capable Windows Phone games will be written with the XNA technologies, which include a framework and runtime environment, also based on *.NET* but optimized for 2-D and 3-D gaming, and an integrated development tool called XNA Game Studio. XNA games can target Windows Phone, Windows and Xbox 360 (as well as the Zune HD),

and developers can target Windows Phone, Windows and Zune HD for free. XNA makes things easier on developers by providing a single development environment. So they can easily reuse code, even entire game engines, between the platforms, or even port the same games between the supported platforms.

- ▶ **Xbox Live:** Microsoft's amazing online game service for the Xbox 360 provides a wide range of functionality for gamers, including (but not limited to) multi-player gaming with matchmaking, in-game achievements with gamer points, friends lists, in-game and extra-game communications capabilities, leaderboards and much more. It works with certain Windows-based games through the awkwardly named Games for Windows - LIVE, and now it works with Windows Phone as well.

Looking at games on Windows Phone, there are basically two types of games: those that are a part of Xbox Live and those that are not. And while it may be convenient to think of Xbox Live titles as being more professional, that's a bit of a stretch. We think of it more like this: Anyone can write a game for Windows Phone, and those games can be as sophisticated (or not) as the developer wishes. But those games that wish to take advantage of features like achievements and leaderboards will need to be part of Xbox Live. And to become a part of Microsoft's curated, tightly controlled online service, there are some hoops to jump through. Generally speaking, the world's biggest developers will be using Xbox Live features while individual developers won't. But that's just a generality.

Xbox Live is so important to the Windows Phone game experience that we'll now be taking a side trip to show you what's going on with this exciting online service. We'll have you take a look at which parts of Xbox Live are available on Windows Phone, and jump from there into the Games Hub, which is the central location for all of your gaming activities on the phone.

Xbox LIVE

Xbox Live began in 2002 as a feature of the original Xbox console. Back in the early days, it was essentially a vehicle for *Halo* and *Halo 2* multi-player gaming, and indeed many of the core features we now associate with Xbox Live came out of Microsoft's experiences with those early *Halo* games.

The modern Xbox Live service came to life in 2005 with the launch of the Xbox 360. (And if you're familiar with Games for Windows - LIVE, you know that this service essentially delivers an almost complete Xbox Live experience on Microsoft's dominant PC platform as well.) At this time,

Microsoft greatly enhanced Xbox Live, offering the core capabilities and experiences that Xbox 360 gamers still enjoy today.

Microsoft also offers two types of Xbox Live accounts, a free Silver account type and a paid Gold account type. Xbox Live Gold members represent a little over half the subscriber base. Of course, Xbox Live Gold subscribers must get something for their troubles. Microsoft rewards its paying customers with some unique features, most of which fall into two neat categories: Multi-player online games (the Xbox 360's traditional hardcore audience) and forward-leaning multimedia and social networking features (one potential future for the Xbox 360).

On the gameplay side, Xbox Live Gold subscribers get online multi-player gaming, party and party chat functionality and video chat capabilities. When you sign up with Xbox Live, you must create an Xbox Live account. What this really means is that you're creating a Windows Live ID, because Xbox Live – like Windows Live, Zune and other Microsoft services – simply uses the same underlying identification service. So at the time of sign-up, you can use your own email account, no matter where it's from, and Xbox Live will turn that email address into a Windows Live ID. Or, if you already have a Windows Live ID, through Hotmail or MSN, you can simply use your existing account.

Xbox Live accounts

Each Xbox Live account consists of the following general features:

- ▶ **Gamertag:** This is your identity or name on Xbox Live, and it maps to the name you've established for your Windows Live ID. If you're not happy with this name, you can change it, but Microsoft charges in order to prevent kids from constantly changing their names.



Your avatar can be made to resemble you



Gamer Picture – you may want to match this to your Gamertag

- ▶ **Gamer Zone:** This item describes what type of gamer you are and can be set to Recreation, Pro, Family or Underground.
- ▶ **Gamer Picture:** This is a small, usually simple picture that represents you online. Xbox Live Silver gamers have one gamer picture, which is viewable by all users, while Xbox Live Gold gamers can have two – one for friends and another for the general populace. If you have a video camera add-on for the Xbox 360 console, you can use that to take a still photo of yourself and use it as a gamer picture, but only friends can see it.
- ▶ **Motto:** This is a 21-character textual representation of who you are and what you stand for.
- ▶ **Avatar:** Beginning in 2009, Microsoft added another graphical representation of your Xbox Live account, this one in the form of a cartoon-like character called an avatar. Based largely on the Nintendo Wii's similar “Mii” characters, an avatar can be designed to look (somewhat) like you.
- ▶ **Name:** Your real name or, alternatively, a nickname.
- ▶ **Bio:** A text box with up to 499 characters.
- ▶ **Location:** Text field with up to 40 characters of explanation.
- ▶ **Privacy Settings:** You have fine-grained control over various privacy settings, including those related to voice and text, camera, profile, online status, video status, friends list, game history, member content, Xbox marketing and partner marketing.

- ▶ **Profile:** Your Xbox Live profile consists of the Gamertag, Gamer Zone, Gamer Picture, Motto, Avatar, Name, Bio, Location and privacy settings information described before.
- ▶ **Rep:** This is your reputation score, on a scale of one to five. Every Xbox Live member starts at three and your rep can go up or down from there based on your experience (the more you play, the higher the rep) and whether any other gamers complain about you online (the more you misbehave, the more people complain, and the more your rep declines).
- ▶ **Gamerscore:** Each Xbox Live game can assign gamer points to individual achievements, as we'll soon discuss. These points are applied to your Gamerscore, which starts at zero. The higher your Gamerscore, the more experienced you are, generally speaking, though many hardcore gamers only play in multi-player matches that don't provide multi-player achievements and thus might have deceptively low Gamerscores.
- ▶ **Gamercard:** Your Xbox Live Gamercard combines your Gamertag, Gamer Picture, Rep, Gamerscore and Gamer Zone into a single, easily viewable overview of your Xbox Live account or gamer persona.
- ▶ **Messages:** Using an email-like system, Xbox Live members can message each other using text, audio and video chat. These messages aren't ever broadcast via normal email systems (via the email associated with your Windows Live ID), but you can view and respond to them on the Xbox 360 and, for text messages, via the Zune PC software as well.
- ▶ **Friends list:** As with Facebook and other social networks, you can "friend" other people online, send and receive friend requests, see what your friends are doing online in real time, send messages to friends and more. The Xbox Live Friends list is sorted by online status so that online friends are listed first.
- ▶ **Players list:** Xbox Live also tracks the players you've most recently played against so you can find them again later and request a rematch, send feedback (positive or negative) or send a friend request.
- ▶ **Games list:** Xbox Live also tracks the games you've most recently played, as well as the achievements you've most recently earned, including all of the achievements earned in each played game. Friends can examine your account to see which games you've played and which achievements you've earned, and compare them to their own results.

If there's a problem with Xbox Live accounts, there's no escaping the fact that much of the profile and Gamercard type information can only be edited, at this time, from an Xbox 360 console. So even though you can log on to xbox-

live.com from any web browser, you can only view your Xbox Live account information, not edit much of it. What this means to you is simple: If you're new to Xbox Live – maybe you've joined because of Windows Phone – and don't even have an Xbox 360 console, your account is going to look pretty weak.

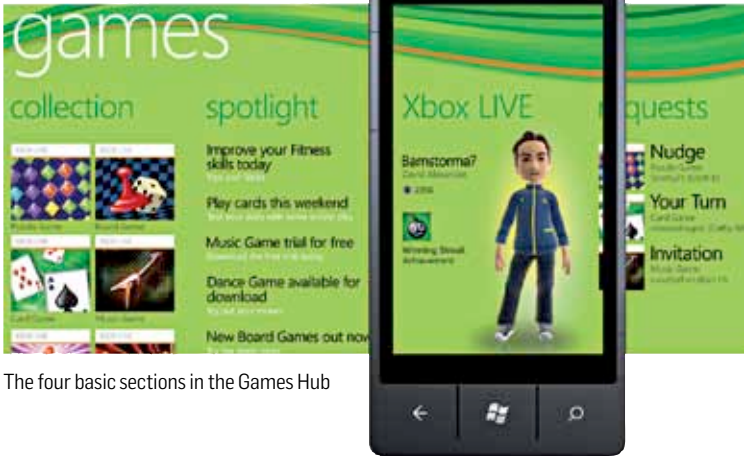
One of the best reasons to join Xbox Live, and this is as true on Windows Phone as it was previously on the Xbox 360 console (and, to a lesser extent, on Windows PCs with Games for Windows - LIVE) is the games. Sure, Xbox Live offers some multimedia and social networking functionality on the console, but the real reason for this service is to get people together to compete against each other online. These online competitions take two general forms. That is, you can compete implicitly with your friends and others by trying to rack up higher overall Gamerscores, by completing single player games, and single player achievements, before others do, and so on. You can also compete explicitly with others via online multi-player games. On the Xbox 360, the most common of these games are online shooters, such as those in the *Call of Duty*, *Gears of War* and *Halo* series. But there are many other wildly popular online game types on Xbox Live as well.

If you're at all competitive, you'll immediately be drawn to Xbox Live's achievements system. On the Xbox 360 console, each game is generally given up to 1,000 achievement points to dole out, typically via any number of individual achievements. When you do trigger an achievement perhaps by completing an in-game level or other task, the console pops up the ever-popular Achievement Unlocked message, which provides the name of the achievement. You can tap a button on the Xbox 360 console to learn more, including how many achievement points you've earned and the description of the achievement. You can also view your overall Gamerscore to see how the achievement points affected things.

The Games Hub

On Windows Phone, the Games Hub is the centre for all of your on-device gaming activities and the place you'll visit to play games, examine your Xbox Live profile and achievements, view and send game invites, buy and try new games, learn more about new games and gaming-related events and more. The Games Hub is representative of the panoramic experiences in Windows Phone, offering a sweeping, multi-screen interface that pans from left to right.

There are four basic sections, or columns, in the Games Hub: Collection, Spotlight, Xbox Live and Requests. We'll examine each of these now,



The four basic sections in the Games Hub

but as a reminder, you can play two different types of games on Windows Phone: Xbox Live games and non-Xbox Live games. Both types of games are accessed through the Games Hub, but they're presented a bit differently in the Collections view, and are advertised a bit differently in the Games Marketplace.

Collection

When you first access the Games Hub, you're presented with the Collection view. From this interface, you can browse through all of the games you've downloaded and installed on the phone and, toward the bottom of the list, also a select few games that Microsoft is promoting. Games are ordered with the most recently played titles first, and if you have both, Xbox Live and non-Live games, they'll simply be intermingled here. That said, Xbox Live games are prominently differentiated with an Xbox Live banner.

Under an Other Games segment in this section, Microsoft advertises current game promotions in the Games Marketplace. You can also tap the "Get More Games" link to visit the Games Marketplace and browse from there. To start a game, simply tap its thumbnail.

Spotlight

In the Spotlight view, Microsoft provides a feed-like list of news items related to Xbox Live. These include tips about games, advertisements for

new games and other related info. When you tap on an individual item in the Spotlight view, Internet Explorer launches for you to know more about it.

Xbox Live

In this section, you'll find some basic information from your Xbox Live account; this will include your avatar, Gamertag, Name, Gamerscore and your last achievement. Because Xbox Live is cross-platform, that achievement could come from any of the supported platforms – Xbox 360, Windows or Windows Phone. Many of the items on this screen are links to web-based content. If you tap your avatar, Gamertag, etc you'll be taken online to find out more.

Remember that Windows Phone supports only a sub-set of the overall Xbox Live features or, as Microsoft describes it, the Xbox Live features that make sense on the phone. One of the obvious differences is the avatar: On the Xbox 360 console, your avatar is quite animated, and if you leave him alone onscreen, he'll bound around in amusing ways. On Windows Phone, without the updates at least, the avatar is decidedly less animated.

Game requests utilize the same onscreen overlay as incoming phone calls, messages and voicemails and they can interrupt you when you're doing something else on the phone, giving you the opportunity to drop what you're doing and pick up a game. If you choose to ignore such notifications, or are simply away from the phone when they show up, these pending game invitations and other request-related notifications are delivered into the Game hub. You can view them in the Requests section.

There are three possible request types you can find here:

- ▶ **Invitation:** When someone asks you to join them in a game online, an invitation is generated.
- ▶ **Your Turn:** Windows Phone provides support for asynchronous, turn-based games such as Backgammon, Scrabble and so on. In such games, the two players take turns in isolation and then alert each other that it's their turn through this interface. This is a neat idea, and it makes even very casual game experiences a social experience you can have, over time, with other people.
- ▶ **Nudge:** If someone hasn't gotten a response from you in a while, they can send a nudge, which is like a gentle reminder that they're still waiting on you.

Playing games

To play a game at any time, tap its thumbnail in the Collection view. Games are, of course, unique experiences. Some will work only in the portrait view

that is standard for most productivity games while others (likely most games) over time will run only in landscape view. Most games will rely on the device's touch screen to provide a virtual control scheme, and these controls will vary from game to game. If the game offers a way to invite other gamers into the game, or send similar requests, that functionality too must be implemented by the game maker and so will vary from title to title as well.

While playing a game, you can be interrupted by notifications for phone calls, voicemails and text messages, using the standard slide-down notification overlay, or toast, that's used elsewhere in the system. So this works in a manner with which you're likely already familiar.

The most eagerly anticipated interruption, of course, is the achievement, which can be provided in Xbox Live compatible games. Achievement notifications work just like other Windows Phone notifications, using a toast overlay. You can tap this overlay to pause the game and learn more about the achievement.

More games from the Marketplace

On Windows Phone, there are two main entry points for the Marketplace if you're looking for games. You can use the dedicated Marketplace application in All Programs. Or you can side load the Marketplace's App experi-




The Phone 7
Marketplace



Search and install games from the Marketplace

ence through the Games Hub. Just tap the “Get More Games” link at the bottom of the Collection view. The Games area on the Marketplace is an ever-evolving collection of game titles, divided into common areas such as Featured, Top, New, Free and so on, as well as a list of game genres and all games. Remember, too, that you can search from within the marketplace at any time by tapping the phone’s Search button.

As with other apps on the Marketplace, each game will be presented on its own page with various tidbits of information including the name, developer, price, description, screenshots, rating, reviews and links to related games. You can share the game via email or messaging, buy it and, if the option is available, try it. You can even leave your own rating and review if you’d like. 



TIPS & TRICKS

Windows Phone funnily enough seems to be dealing with a paradox. It's probably one of the most sophisticated and powerful smartphones but still lacks proper interaction with PCs, as compared to integration with the web

Now that we've got all the basics out of the way, it's time to dig a little deeper and find those additional features that make using the Windows Phone 7 even more interesting and functional. Learn to lock your phone among other things.

Lock your phone

One of the most logical and simplest tips everyone needs to follow is to lock your phone with a password. The phone is a highly personal device and if it's one that's as powerful as a Windows Phone 7, it has tons of private

and personal information. And it could also be full of your work-related critical data, especially if you're syncing with work-based email, contacts, calendars and documents. Don't be a statistic.

Locking the phone is easy, as is unlocking when you want to use it. To enable a lock, navigate to **All Programs > Settings > Lock & Wallpaper**. From this interface, you can change the wallpaper and personalise it if you want. Here's also where you configure other features related to locking the phone. Windows Phone supports exactly one kind of password: a four-digit numeric PIN, similar to what you use in ATMs. Memorise it and ensure that it's not immediately obvious to others. To add a lock to the phone, switch the Password option to On. Then, type in the password/PIN you'd like to use. Windows Phone will prompt you to type it twice just to make sure you get it right. Then check out the Screen Time Out option. This setting, which can be set to 30 seconds, 1 minute, 3 minutes or 5 minutes, determines how long the screen remains active after you last tapped it. Once this time elapses, the screen shuts off and the lock is activated.

There are actually some additional features you can configure to work when the screen is locked. And these features can't be accessed from Lock & Wallpaper, so you really have to dig deep to find them.

- ▶ **The phone's integrated camera:** By default, you can configure the camera's on-device button to wake up the phone when pressed. But maybe you don't want that for some reason. To disable this feature, navigate to **All Programs > Settings > Applications > Pictures + Camera**. The very first option on this settings screen is "Allow the Camera Button to Wake Up the Phone". If you would prefer this to be off, just change it to Off.
- ▶ **Windows Phone's incredible speech functionality:** While the phone is on, you can hold down the Start button for a few seconds to trigger the speech interface; just speak a command: "open calendar" "call Pavan at home" or anything at all and the phone will begin doing your bidding. By default, the speech feature won't work when the screen is locked. So if the phone is off and you hold down the Start button for a few seconds, nothing will happen. But if you navigate to **All Programs > Settings > Speech** you'll find an option titled "Use Speech When the Phone Is Locked". Just check that option and you're good to go. Enabling speech when the phone is locked isn't as clear cut as the camera setting, however. That's because depending on the design of your particular phone and

your usage patterns, it's possible for the phone to inadvertently trigger the speech feature when the button was pressed while in your pocket or bag. You've heard of "pocket dialing", for sure. Welcome to pocket speech command. Test this feature if you think it will be useful. And pay attention to any suspicious battery drain or angry blank call recipients.

- ▶ **Find My Phone:** Microsoft offers a free service called Find My Phone that will help you recover a lost or stolen Windows Phone. There are a couple of on-phone settings related to Find My Phone that might be of interest in the context of locking your phone. That is, Find My Phone works best when it can actually find your phone. And while you can manually try to find a lost or stolen phone from the web, seconds count. So if you navigate to **All Programs > Settings > Find My Phone**, you can enable two options:
 - **Save My Location Periodically for Better Mapping:** It's a must if you think that there's any chance of you losing your phone.
 - **Use Push Notification:** This could be more of a problem than a benefit. That's because pushing your location info from the phone can be battery intensive, especially if you're moving around a lot. So this could drain the battery prematurely.

From the Find My Phone web service, one of the things you can do is lock the phone's screen remotely.

Use Windows Phone in Flight Mode

Many smartphones have a special master on-off switch for all wireless features called Flight Mode, and in this regard Windows Phone is no different. It's so named because flights prohibit the use of wireless equipment on a plane while it's taxi-ing or flying. But phone users would like to use their devices' non-network functionality, to play music or enjoy a game while in-flight.

On Windows Phone, you access this mode called the Airplane Mode here at **All Programs > Settings > Airplane Mode**. In this interface, you'll see a single Radios on/off



The Airplane mode a.k.a the Flight Mode

switch. In the On position, the phone's cellular (voice and data), Wi-Fi and Bluetooth radios function normally and can be configured via their individual Settings interfaces (cellular, Wi-Fi, and Bluetooth, respectively). So when Airplane Mode is disabled, you're free to enable or disable the other features independently. When Airplane Mode is set to Off, all three of the radio types are shut down in unison. When the phone is in Airplane Mode, a tiny icon signifying the same appears in the status bar.

Configure accounts

You obviously know by now that you log on to your primary Windows Live account as part of the initial experience. But most people have other accounts, too. These include accounts associated with email, calendars, contacts and other services, and they come from a variety of sources online.

Windows Phone supports multiple account types, including explicit account types such as Windows Live, Outlook (Exchange), Facebook and Yahoo! as well as other account types implicitly through more advanced and complicated configuration interfaces. And it supports multiple instances of account types too, so you could configure, say, two different Google accounts if you wanted. Further complicating matters, the available services in each account differ from account type to account type. So with all of that in mind, here are the different account types offered in Windows Phone.

- ▶ **Windows Live:** As discussed previously, everyone who uses Windows Phone will need a Windows Live ID. This is the key to having a great experience, but is also required for certain phone features. So it's a primary account and behaves differently than other accounts. When you configure your primary Windows Live account on the phone initially, it connects to your contacts list, photos and feeds, automatically and behind the scenes. These features can't be individually configured. You can, however, later enable email sync on your primary Windows Live account if you'd like, from within the phone's Settings interface. And if you navigate to the Calendar app, you'll see that Windows Live calendar sync is enabled automatically. But you can turn off calendar sync from there if you didn't want that. One thing you can't do is disable contacts sync on your primary Windows Live account. It's on, and there's no way to change that. Of course, Windows Phone supports multiple Windows Live accounts, though the secondary accounts only offer email, contacts

and calendar sync, and none of the feed and online services integration you get with the primary account. With a secondary Windows Live account, you can individually enable or disable email, contacts, and calendar sync, so in this way, at least, it's actually more configurable than the primary account.

- ▶ **Exchange, Outlook or Outlook web apps:** You use the Outlook account type to connect to Exchange Server accounts. This includes Exchange Server, Outlook Web Access and so on, but also any email account that uses Exchange ActiveSync (EAS) technology on the back end. And that's a surprising number of account types, including Google (Gmail) and Windows Live (Hotmail). What this means is that even though both, Gmail and Hotmail are explicitly supported by Windows Phone with their own pre-built account types, you could in fact configure accounts of either type using the Outlook account type instead. And Outlook accounts can be configured to enable/disable email, contacts and calendar sync individually.
- ▶ **Facebook:** Currently Facebook is probably the only non-email service and social network which can be directly accessed through the interface directly and added as an account to Windows Phone 7. The Facebook service can be turned on or off; connecting to Facebook syncs all the contacts, photos and feeds to your phone. Unfortunately there is no direct method currently to configure and set which of these should not be synced viz. turn off contacts but leave the others on.
- ▶ **Yahoo!:** Of the preconfigured account types that support email, Yahoo! is the most limited. That's because Yahoo! can be configured only for email access. The connection is automatic, but if you check the settings, you'll see that it uses the IMAP protocol. There's no way to sync the Yahoo! calendar or contacts with Windows Phone.
- ▶ **Google:** Google's email service, Gmail, can be configured via the Google account type as can the company's contacts and calendar services.
- ▶ **Other Accounts:** With this account type, Windows Phone will attempt to automatically configure your settings. For most accounts, that means you'll only get email access, and then only via whatever basic protocols

may be supported on the server. But if you use an address with a supported account type (gmail.com, live.com and so on), Windows Phone will properly configure it and give you the option to enable and disable whichever services are supported by that account type.

- ▶ **Advanced Account setup:** This account type starts off like Other Accounts, but rather than try to auto-detect the server settings, it will step you through a more advanced manual configuration. After entering the username and password of the account you'd like to set up, you must choose between Exchange ActiveSync or an internet email account which can be either a POP3 or an IMAP-based account only.

Wi-Fi sync

This configuration is actually made from the Zune PC software, but since it's deeply tied to the overall configuration of the phone, it makes sense to cover it. Generally speaking, you connect your Windows Phone to the PC for just a few reasons: To sync photos taken with the phone's camera to the PC, to sync your PC-based media collection to the phone, to install large software updates and so on.

Each of these actions requires you to physically connect the phone to the PC using a USB-based PC sync cable. But Windows Phone, like the Zune HD before it, supports a more automatic way to perform these same actions. Microsoft calls this feature wireless sync, but since it can only work over a Wi-Fi wireless network (and not over cellular or Bluetooth connections) the name Wi-Fi sync makes more sense. Wi-Fi sync is brilliant in its simplicity: Since many today have a Wi-Fi-based home network, and since many most likely bring their phone home every day to charge it, chances are that your PC and phone will be in close proximity to each other and connected (at least, wirelessly) to the home network. So instead of forcing you to explicitly tether the phone to the PC, you can instead just configure the phone to sync over Wi-Fi. And it will happen automatically, as long as you plug the phone into a wall outlet for charging.

First, you must connect your phone to the home network's Wi-Fi connection and the phone's Wi-Fi functionality must be enabled. Then, connect your phone to the PC using the USB sync cable. This is only for this configuration step. Next open the Zune PC software and navigate to **Settings > Phone > Wireless Sync**. This will trigger a short wizard. In the first and only step of this wizard, you must confirm the network that

will be used for wireless sync. Each time your phone has been connected to wall power for at least 10 minutes and detects the configured Wi-Fi network, it will search out the syncing PC and begin syncing content in both directions automatically.


Once the settings have been verified, the wizard will inform you that wireless sync has been configured and you're good to go. Chances are you won't have nearly as much use for the data cable in the future: Simply charging your phone in the same room or often just in the same house as the PC is all you'll need to do.

Wipe your phone clean

Every once in a while you may find yourself in a situation where you simply want to start over again with a clean phone OS devoid of all the media, apps, documents, pictures and other gunk that's been piling up since Day One of using the phone. Windows Phone supports a way of starting over from scratch. Before going down this path, take some steps to ensure that everything on the phone is backed up somewhere. The simplest thing you can do is connect the phone physically to your syncing PC via a USB cable and let the Zune PC software copy everything from the device to the PC. Here are some common data types to think about:

- ▶ **Email, contacts and calendars:** Since your Windows Phone email, contacts and calendar accounts all live up in the cloud, there's not too much you need to do there, aside from ensuring that you know all the login information (usernames and passwords) and, for more complex account types, the required server settings.
- ▶ **Messages:** Your text messages and any pictures received via messages will be deleted when you wipe out the phone. There's no way to save messages, but you can, of course, save any pictures to the phone and then sync them to the PC.
- ▶ **Games and applications:** Any games and applications you've downloaded to the phone – paid, free or trial – can't be backed up, but then they don't need to be. You can simply download them at any time from the Windows Phone Marketplace, and you won't have to repay for any apps you've already purchased. If you have many such apps, you may want to just save their names.

- ▶ **Pictures:** Pictures you've downloaded to the phone will need to be synced to the PC via the Zune software. Or you can individually "share" each picture, sending them off the phone via email.
- ▶ **Purchased music:** Music you purchased from Zune Marketplace can be re-downloaded, but it's easier to just sync it to the PC.
- ▶ **Documents:** Any Word documents, Excel workbooks or PowerPoint presentations that are stored on the phone will need to be backed up. The quickest way to do this, perhaps, is to send them to yourself via email: Just tap and hold each in turn in the Office hub and choose "Send". Then enter your email account from the pop-up menu. You won't need to do this for SharePoint-based documents. And if you're syncing your OneNote-based notes to Windows Live SkyDrive, you should be all set there as well.

When you're sure you've successfully accounted for everything of value on the phone, you're ready to nuke the device and start over. Navigate to **All Programs > Settings > Reset Your Phone**. You'll be asked to confirm this decision twice. Windows Phone OS will then wipe out all of the data on the phone, reboot and take you back to Day One of owning a Windows Phone. It's like getting a brand new phone. 



THE FUTURE AND MANGO UPDATE

Mango OS tries to make up for many of the older firmware's shortcomings

Microsoft just recently launched for its existing phones, Windows Phone 7.5 codenamed the Mango release. It has many major improvements and hundreds of added features while trying to be more social and people-centric, making it even easier to stay connected. In many ways, the user interface has been made extremely intuitive and user friendly, arguably probably even more than Android. Unfortunately, it still has its drawbacks – it doesn't support most forms of 4G.

The Mango release brings scores of newly added features to the Windows Phone OS. The browsing experience has been enhanced greatly with an improved Internet Explorer. The OS has limited yet better multitasking capabilities, and social integrations with Twitter and LinkedIn. It now comes with a brilliant interface to let you create different groups of friends and associates from your social media accounts and contacts. The Mango update gives apps more ways to provide you with useful and relevant information, an option to turn your phone into a Wi-Fi hotspot and much more.

Phone 7, unlike its app-centric counterparts the iOS and Android is more interaction and activity based with its tiles. The various hubs let you focus on specific activities like pictures, music, videos and people. In the Mango release, the People Hub has a new Groups feature which lets you make groups of people from different sources including Facebook and Twitter added to your contacts list. Mango keeps it simple and lets Phone 7 give you added control over your Facebook interactions. Mango lets you reflect the Circles and Lists concept of social media.

You can find Facebook almost everywhere within the OS now. When you take a picture using the camera on the phone, even straight out of the lock screen, it lets you auto-tag pictures with your friends' names, and provides you with the option of instantaneously posting and sharing them on Facebook. Even the calendar is integrated to take note of all your Facebook events, including the walls and commentary for a particular event. The improved Gallery gives you better access to all your friends' photo galleries on Facebook. The Messaging SMS feature now also includes a Facebook Chat option. Mango is easily the most deeply integrated OS when it comes to Facebook compared to other popular OSes like iOS and Android.

Additionally Mango now makes integration possible for Twitter and LinkedIn contacts right into your activity list. There's also a third-party app for LinkedIn called In+, which can be used as a live tile. It provides deep linking functions to put LinkedIn contacts onto your start screen.

Some of the really good features of Mango are these very same deeply integrated, live tiles for applications. The Windows Phone's tiles can now also show content from various different third-party apps. The basic aim of the tiles itself is to update dynamically, letting you see all your new RSS articles, for example.

The new Internet Explorer 9 browser is clearly on par with almost all other mobile browsers out there, but by default it doesn't support Flash. It has the ability to handle HTML5 giving decent performance. The same



Mango brings tons of new features to Windows Phone



phone with Mango checked with the Browsermark benchmarking test is found to be four times as fast as the previous version. Unfortunately, the latest Android 2.3 phones and BlackBerry 7 phones run against these very same benchmarks faster.

Many more screens and apps which previously couldn't, can now switch to the landscape display mode. Multitasking with Mango is surely a blessing. Holding down the phone's Back button lets you switch between the previous five apps used. Currently, only a few apps such as the Google Reader client gReadie, can update data in the background and display it on live tiles.

Many games as usual connect to Xbox Live, letting you add gamer points and achievements to your list. Windows Phone is still possibly one of the best mobile OSes for gaming. In terms of inbuilt apps, both the email and office apps have been upgraded. Merging multiple mailboxes and calendars into one view is now possible. You can also set up individual folders into different home screen tiles. There's a new conversation view in email, and you can more easily start calendar entries by typing directly into a calendar line.

The Office Hub can now automatically connect to your SkyDrive, letting you back up and get files onto your phone with ease. Bing Vision, a clone of Google Goggles, lets you search for objects by scanning barcodes to return web and shopping results, or translating text between languages. Mango comes with a new, flashier voice-to-text feature. Text messages can be dictated using voice commands, and voice input is via a bluetooth headset.

In terms of the Music and Video Hub, it has become much easier to shuffle your music, download podcasts and watch videos in full screen. It's easier to jump to specific apps in a long list, have more Xbox Live integration, custom ringtones and visual voicemail. The phone's volume indicator has also been made clearer.


Drawbacks

Unfortunately, Mango has its drawbacks. It doesn't support LTE or WiMAX. Neither does it support dual-core processors, including the latest GPUs. It comes with only a 800x480 resolution.

No network support implies that the internet will feel slower on Windows Phones than on competing 4G Android devices, while limited GPU support might not go down well with high-end game developers. Mango supports only the Qualcomm S2 processors, not even Qualcomm's faster S3 models.

The new Bing "Local Scout" function has received much negative criticism. It's supposed to provide a guide of your surroundings such as places to shop, eat and entertain yourself. Many a time though, the results are not what you expect or want.

Many screens now appear to work in landscape mode, but key elements including the home screen, dialler, People Hub, Games Hub and Local Scout are still portrait-only. Nonetheless, Mango is still arguably much better at group messaging and social networks than iOS or Android, better at gaming than Android or BlackBerry and visually more delightful and customisable. Mango essentially took the features we liked on Windows Phone 7 and made them even better.

Hopefully Microsoft will soon release updates to address and solve many of these problems while continuing to improve on its amazing features. 



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